A Study of Braille Contractions

Appendices 2 & 3

J.M. Gill

November 1978

k Research Unit for the Blind

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Warwick Research Unit for the Blind
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Appendix 2

Analysis of Warwick Corpus

A data base was assembled of 1030 short pieces in the English language. Sources included sections of novels, short stories for adults, stories for children, non-fiction as well as documents which had previously been requested for transcription by blind individuals. The data base consists of 2,561,308 words; a word is defined as an alphanumeric character string delimited by spaces or punctuation.

Table 2.1 Frequency of words, occurring more than 1000 times and of more than one letter. If the word did not occur in the first 33,092 words it would not be counted.

THE	142881	OF	71401
AND	67749	TO	60047
IN	41191	FOR	23089
THAT	21555	IT	21344
IS	19740	YOU	19271
BE	17998	WAS	17759
ON	17196	HE	16592
WITH	15271	AS	13919
AT	13416	OR	11448
HIS	11138	BY	11075
NOT	10440	THIS	10391
ARE	10072	FROM	9845
SHE	9794	HAD	9385
HAVE	9322	BUT	9294
HER	8516	THEY	7658
ALL	7639	IF	7157
WHICH	7120	THERE	6921
AN	6776	WE	6524
NO	6489	ONE	6414
WHAT	5978	WILL	5903
BEEN	5610	SAID	5550
WOULD	5482	WERE	5460
YOUR	5242	SO	5220
ME	5173	MY	5143
HIM	4989	UP	4935
CAN	4897	WHEN	4857
OUT	4682	THEIR	4511
WHO	4346	HAS	4330
DO	4309	TIME	4296
ANY	4182	MR	4116
SHOULD	4065	ABOUT	4003
THEM	3846	INTO	3838
OTHER	3834	MORE	3707
LIKE	3618	THEN	3617

MAY	3599	NOW	3512
ONLY	3445	BLIND	3346
SOME	3285	COULD	3258
VERY	3063	OVER	2967
TWO	2830	THESE	2814
SUCH	2804	WORK	2727
THAN	2678	SEE	2643
PEOPLE	2642	SHALL	2586
KNOW	2556	NEW	2550
BACK	2527	MADE	2527
DOWN	2524	HOW	2509
WELL	2456	MUST	2435
MAN	2428	MRS	2423
FIRST	2363	WHERE	2301
COMMITTEE	2262	ITS	2258
AFTER	2229	OUR	2210
LITTLE	2201	BEFORE	2119
MAKE	2114	SOCIAL	2102
GOOD	2078	DON	2071
EACH	2022	OFF	2016
WAY	2013	MEETING	1996
JUST	1971	DID	1968
GO	1966	ROAD	1949
HOUSE	1949	ALSO	1908
BRAILLE	1891	RIGHT	1854
THINK	1847	THROUGH	1818
COME	1818	OLD	1810
US	1808	TOO	1791
MUCH	1783	THOSE	1776
NEVER	1738	AGAIN	1738
BEING	1736	UNDER	1727
GET	1724	HERE	1706
USE	1695	LIFE	1695
DAY	1667	MOST	1666
TAKE	1664	CHILDREN	1600
STILL	1589	LAST	1585
EVEN	1579	LL	1578
NEXT	1570	WHY	1561

SAY	1555	LONG	1555
BETWEEN	1525	COURSE	1513
OWN	1500	YEARS	1498
YEAR	1482	UNTIL	1468
MEMBERS	1468	PART	1462
RE	1457	VE	1453
SAME	1439	SERVICE	1438
MANY	1422	BECAUSE	1418
PLACE	1414	HOME	1402
MISS	1394	THOUGHT	1392
CAME	1379	SECRETARY	1371
HAND	1365	MINUTES	1359
ROOM	1359	LONDON	1357
REPORT	1356	USED	1335
ALWAYS	1334	ASSOCIATION	1330
LEFT	1330	END	1328
AWAY	1327	AM	1321
SOMETHING	1314	EYES	1297
THREE	1295	PUT	1287
MIGHT	1278	GIVE	1266
SERVICES	1259	WANT	1255
HELP	1245	MEN	1244
LOOK	1237	PAGE	1230
MUSIC	1223	STREET	1219
WITHOUT	1218	GIVEN	1211
FOLLOWING	1202	GOT	1198
ANOTHER	1192	EVERY	1189
ASKED	1183	CASE	1179
BOTH	1179	SOCIETY	1172
NUMBER	1172	GENERAL	1170
GREAT	1169	INFORMATION	1166
COUNCIL	1156	LOOKED	1155
GOING	1154	UNIVERSITY	1152
NATIONAL	1152	NEED	1151
WENT	1144	ACT	1126
SYSTEM	1113	NOTHING	1110
OH	1109	LET	1107
SIR	1106	SIDE	1103

YES	1101	ROW	1097
HEAD	1097	EDUCATION	1090
WORLD	1085	HELD	1074
AGAINST	1067	WARWICK	1065
DOES	1061	LOCAL	1056
AVAILABLE	1053	OFFICE	1038
SMALL	1038	PRESENT	1037
PERSON	1021	WATER	1020
FACE	1013	DOOR	1012
POLITICAL	1011	SET	1007
DIDN	1007	SE	1006

Table 2.2 The frequency of contractions in order of space saved over uncontracted braille. An asterisk indicates a single cell contraction.

	Contraction	Number of occurrences	Total number of spaces saved over uncontracted braille	Cumulative percentage of space saved
1	* THE	169574	339148	10.58
2	* AND	81773	163546	15.68
3	* ING	75487	150974	20.39
4	* ER	123808	123808	24.25
5	* TO	59178	118356	27.94
6	* IN	113958	113958	31.50
7	* ED	95709	95709	34.48
8	* EN	83898	83898	37.10
9	* OF	80243	80243	39.60
10	* ST	74585	74585	41.94
11	* AR	68447	68447	44.07
12	* FOR	33571	67142	46.16
13	* THAT	21539	64617	48.18
14	ATION	21293	63879	50.17
15	* WITH	17567	52701	51.82
16	* EA	47326	47326	53.29
17	* YOU	19210	38420	54.49
18	* CH	36950	36950	55.64
19	* TH	34879	34879	56.73
20	* WAS	17250	34500	57.81
21	* OU	34388	34388	58.88
22	* SH	31408	31408	59.86
23	* CON	15565	31126	60.83
24	TION	15563	31126	61.80
25	* THIS	10367	31101	62.77
26	MENT	15001	30002	63.71
27	* FROM	9830	29490	64.63
28	* OW	29379	29379	65.54
29	* COM	14297	28594	66.43
30	* WHICH	7106	28424	67.32
31	(SPACE)	28119	28119	68.20

	Contraction	Number of occurrences	Total number of spaces saved over uncontracted braille	Cumulative percentage of space saved
32	* HAVE	9314	27942	69.07
33	* BLE	12219	24438	69.83
34	THERE	7770	23310	70.56
35	* WH	22770	22770	71.27
36	* BY	10697	21394	71.94
37	* IT	21308	21308	72.60
38	* NOT	10412	20824	73.25
39	* HIS	10215	20430	73.89
40	* BE	19449	19449	74.49
41	* BUT	9272	18544	75.07
42	* WILL	5871	17613	75.62
43	WOULD	5860	17580	76.17
44	SHOULD	4174	16696	76.69
45	* WERE	5277	15831	77.19
46	* AS	13881	13881	77.62
47	THEIR	4521	13563	78.04
48	SION	6677	13354	78.46
49	* DIS	6627	13254	78.87
50	* PEOPLE	2641	13205	79.28
51	* GH	12872	12872	79.68
52	ANCE	6392	12784	80.08
53	ONE	12771	12771	80.48
54	PART	6343	12686	80.88
55	ABOUT	4086	12258	81.26
56	SOME	6099	12198	81.64
57	ALLY	5859	11718	82.01
58	INTO	3789	11367	82.36
59	COULD	3782	11346	82.71
60	TIME	5662	11324	83.07
61	SAID	5612	11224	83.42
62	* MORE	3707	11121	83.76
63	ENCE	5543	11086	84.11
64	WORK	5514	11028	84.45
65	YOUR	5489	10978	84.80

	Contraction	Number of occurrences	Total number of spaces saved over uncontracted braille	Cumulative percentage of space saved
66	EVER	5469	10938	85.14
67	* LIKE	3594	10782	85.47
68	UNDER	3562	10686	85.81
69	BLIND	3493	10479	86.13
70	OUND	5178	10356	86.46
71	* SHALL	2585	10340	86.78
72	THROUGH	1998	9990	87.09
73	* CAN	4882	9764	87.40
74	CHILDREN	1625	9750	87.70
75	HAD	9625	9625	88.00
76	* OUT	4680	9360	88.29
77	* VERY	3048	9144	88.58
78	LITTLE	2216	8864	88.85
79	WHERE	2918	8754	89.13
80	BEFORE	2149	8596	89.39
81	RIGHT	2848	8544	89.66
82	THESE	2810	8430	89.92
83	QUESTION	1362	8172	90.18
84	ITY	7774	7774	90.42
85	OUGHT	2565	7695	90.66
86	BETWEEN	1528	7640	90.90
87	BRAILLE	1907	7628	91.14
88	FIRST	2386	7158	91.36
89	BECAUSE	1419	7095	91.58
90	KNOW	3546	7092	91.80
91	AFTER	2305	6915	92.02
92	OUNT	3228	6456	92.22
93	* STILL	1585	6340	92.42
94	NESS	3073	6146	92.61
95	* JUST	1969	5907	92.79
96	SUCH	2813	5626	92.97
97	THOSE	1776	5328	93.14
98	AGAIN	1744	5232	93.30
99	* SO	5202	5202	93.46
100	* FF	5113	5113	93.62

	Contraction	Number of occurrences	Total number of spaces saved over uncontracted braille	Cumulative percentage of space saved
101	HIM	4988	4988	93.78
102	MUST	2483	4966	93.93
103	LETTER	1240	4960	94.09
104	GOOD	2472	4944	94.24
105	DAY	4893	4893	94.39
106	* CC	4872	4872	94.54
107	ONG	4771	4771	94.69
108	* EVERY	1188	4752	94.84
109	NECESSARY	719	4314	94.98
110	* DO	4302	4302	95.11
111	AGAINST	1065	4260	95.24
112	MOTHER	1036	4144	95.37
113	* RATHER	817	4085	95.50
114	TOGETHER	802	4010	95.63
115	ALWAYS	1331	3993	95.75
116	RECEIVE	973	3892	95.87
117	FRIEND	965	3860	95.99
118	HERE	1904	3808	96.11
119	ALSO	1899	3798	96.23
120	* DD	3759	3759	96.35
121	PERHAPS	900	3600	96.46
122	HIMSELF	895	3580	96.57
123	MUCH	1789	3578	96.68
124	MANY	1770	3540	96.79
125	WORLD	1131	3393	96.90
126	* QUITE	846	3384	97.00
127	CHARACTER	471	3297	97.11
128	YOUNG	1065	3195	97.21
129	FUL	3140	3140	97.30
130	GREAT	1557	3114	97.40
131	LESS	1551	3102	97.50
132	* KNOWLEDGE	375	3000	97.59
133	* CHILD	749	2996	97.68
134	EITHER	716	2864	97.77
135	FATHER	713	2852	97.86

	Contraction	Number of occurrences	Total number of spaces saved over uncontracted braille	Cumulative percentage of space saved
136	WORD	1370	2740	97.95
137	BEHIND	642	2568	98.03
138	NAME	1281	2562	98.11
139	IMMEDIATE	426	2556	98.19
140	ALREADY	623	2492	98.27
141	CANNOT	621	2484	98.34
142	* GG	2484	2484	98.42
143	* ENOUGH	494	2470	98.50
144	THEMSELVES	408	2448	98.57
145	ALTHOUGH	454	2270	98.65
146	ITS	2250	2250	98.72
147	AFTERNOON	344	2064	98.78
148	UPON	994	1988	98.84
149	* GO	1968	1968	98.90
150	ACCORDING	269	1883	98.96
151	ACROSS	624	1872	99.02
152	MYSELF	604	1812	99.08
153	* US	1810	1810	99.13
154	ALMOST	595	1785	99.19
155	HERSELF	439	1756	99.24
156	YOURSELF	347	1735	99.30
157	QUICK	553	1659	99.35
158	ITSELF	376	1504	99.40
159	ABOVE	748	1496	99.44
160	LORD	677	1354	99.49
161	TOMORROW	225	1350	99.53
162	PAID	642	1284	99.57
163	BELOW	419	1257	99.61
164	BESIDE	310	1240	99.65
165	* BB	1186	1186	99.68
166	SPIRIT	284	1136	99.72
167	WHOSE	378	1134	99.75
168	BEYOND	249	996	99.78
169	TODAY	277	831	99.81
170	NEITHER	179	716	99.83
171	O'CLOCK	174	696	99.85

	Contraction	Number of occurrences	Total number of spaces saved over uncontracted braille	Cumulative percentage of space saved
172	BENEATH	139	695	99.88
173	TONIGHT	123	615	99.89
174	AFTERWARD	97	582	99.91
175	RECEIVING	109	545	99.93
176	ALTOGETHER	77	539	99.95
177	DECLARE	106	424	99.96
178	OURSELVES	82	410	99.97
179	DECEIVE	38	152	99.98
180	REJOICE	36	144	99.98
181	CONCEIVE	25	125	99.99
182	ONESELF	27	108	99.99
183	PERCEIVE	25	100	99.99
184	YOURSELVES	12	72	99.99
185	DECLARING	13	65	100.00
186	DECEIVING	9	45	100.00
187	REJOICING	6	30	100.00
188	PERCEIVING	3	15	100.00
189	THYSELF	3	12	100.00
190	CONCEIVING	0	0	100.00
		Total	3206108	

In the above table, the spaces saved by using IN, INTO and BY contractions are counted under these contractions and not as (SPACE).

Table 2.3 The number of occurrences of pairs of letters.

AA	314	AN	165535	BA	13689	BN	71
AB	19916	AO	239	BB	1452	BO	18920
AC	35595	AP	19013	BC	151	BP	51
AD	36201	AQ	83	BD	101	BQ	7
AE	696	AR	92888	BE	54251	BR	14243
AF	7178	AS	71898	BF	19	BS	3337
AG	18666	AT	112716	BG	41	BT	1222
AH	1028	AU	10808	BH	99	BU	17482
AI	35566	AV	18894	BI	7671	BV	278
AJ	605	AW	6592	BJ	1398	BW	90
AK	10897	AX	1302	BK	25	BX	20
AL	81689	AY	24182	BL	24040	BY	12457
AM	23293	AZ	1023	BM	319	BZ	4

CA	41630	CN	93	DA	15572	DN	3261
CB	115	CO	66483	DB	541	DO	23764
CC	5326	CP	136	DC	367	DP	144
CD	103	CQ	260	DD	4652	DQ	83
CE	50669	CR	12359	DE	61598	DR	9501
CF	134	CS	2233	DF	908	DS	11991
CG	677	CT	29062	DG	2882	DT	232
CH	53363	CU	12046	DH	349	DU	10680
CI	22766	CV	217	DI	36941	DV	1843
CJ	7	CW	55	DJ	514	DW	784
CK	16765	CX	1	DK	90	DX	17
CL	13678	CY	2670	DL	3977	DY	4708
CM	226	CZ	80	DM	1611	DZ	14

EA	59502	EN	116169	FA	12551	FN	33
EB	2198	EO	5371	FB	35	FO	42750
EC	35674	EP	17078	FC	77	FP	6
ED	98884	EQ	8331	FD	47	FQ	1
EE	42696	ER	177348	FE	18250	FR	17724
EF	11468	ES	97487	FF	13158	FS	291
EG	9389	ET	40720	FG	44	FT	7075
EH	2734	EU	1790	FH	49	FU	8464
EI	13235	EV	19153	FI	22629	FV	1
EJ	349	EW	9775	FJ	23	FW	139
EK	2101	EX	15006	FK	4	FX	1
EL	44622	EY	15781	FL	5554	FY	649
EM	31107	EZ	516	FM	118	FZ	4

GA	13516	GN	3407	HA	87837	HN	2067
GB	254	GO	13900	HB	487	HO	45845
GC	26	GP	26	HC	140	HP	155
GD	305	GQ	0	HD	270	HQ	15
GE	33658	GR	16839	HE	261612	HR	6441
GF	76	GS	5363	HF	234	HS	1211
GG	2758	GT	1664	HG	21	HT	14110
GH	22062	GU	6034	HH	69	HU	5718
GI	12576	GV	10	HI	64760	HV	22
GJ	1	GW	104	HJ	35	HW	397
GK	14	GX	1	HK	55	HX	4
GL	5897	GY	1181	HL	1335	HY	3444
GM	330	GZ	2	HM	978	HZ	66

IA	19706	IN	205445	JA	2882	JN	103
IB	6819	IO	54872	JB	15	JO	5090
IC	54807	IP	6689	JC	45	JP	381
ID	30154	IQ	624	JD	30	JQ	0
IE	29580	IR	27571	JE	3128	JR	40
IF	17037	IS	89464	JF	3	JS	14
IG	19178	IT	92394	JG	33	JT	12
IH	356	IU	664	JH	30	JU	5442
II	1200	IV	19578	JI	189	JV	0
IJ	425	IW	38	JJ	4	JW	11
IK	5244	IX	1798	JK	66	JX	2
IL	42146	IY	14	JL	16	JY	2
IM	23948	IZ	1890	JM	70	JZ	0

KA	1192	KN	6299	LA	42157	LN	340
KB	143	KO	687	LB	918	LO	36750
KC	33	KP	186	LC	947	LP	2136
KD	75	KQ	0	LD	28745	LQ	7
KE	26971	KR	194	LE	76126	LR	729
KF	218	KS	4710	LF	5289	LS	10546
KG	182	KT	156	LG	451	LT	9269
KH	325	KU	208	LH	292	LU	9742
KI	11086	KV	69	LI	55782	LV	2286
KJ	7	KW	252	LJ	8	LW	1739
KK	62	KX	0	LK	2844	LX	13
KL	1752	KY	839	LL	60346	LY	33407
KM	174	KZ	0	LM	2154	LZ	66

MA	46721	MN	882	NA	22922	NN	7795
MB	9327	MO	25431	NB	649	NO	40422
MC	472	MP	17381	NC	30718	NP	698
MD	84	MQ	1	ND	122632	NQ	535
ME	70627	MR	6603	NE	58807	NR	645
MF	403	MS	7191	NF	4586	NS	35695
MG	53	MT	195	NG	92114	NT	78089
MH	170	MU	9760	NH	996	NU	7941
MI	29652	MV	15	NI	26805	NV	3459
MJ	5	MW	69	NJ	842	NW	586
MK	30	MX	2	NK	6719	NX	165
ML	481	MY	6597	NL	5730	NY	9698
MM	10157	MZ	2	NM	1636	NZ	243

OA	6661	ON	139716	PA	28020	PN	63
OB	7082	OO	26754	PB	175	PO	27366
OC	16010	OP	18870	PC	66	PP	14103
OD	14712	OQ	57	PD	89	PQ	7
OE	3013	OR	105249	PE	41018	PR	32529
OF	80473	OS	21821	PF	192	PS	5605
OG	6894	OT	35470	PG	33	PT	7854
OH	2583	OU	97414	PH	6428	PU	9645
OI	7961	OV	17804	PI	10856	PV	10
OJ	587	OW	34029	PJ	19	PW	136
OK	9204	OX	1274	PK	147	PX	5
OL	31327	OY	4460	PL	22177	PY	1081
OM	46527	OZ	1307	PM	1285	PZ	11

QA	27	QN	4	RA	51713	RN	13497
QB	0	QO	1	RB	1997	RO	58463
QC	1	QP	1	RC	8822	RP	2681
QD	2	QQ	5	RD	19767	RQ	117
QE	12	QR	2	RE	151685	RR	11228
QF	1	QS	9	RF	2339	RS	38935
QG	0	QT	37	RG	7503	RT	29296
QH	2	QU	11509	RH	1618	RU	9716
QI	3	QV	3	RI	54295	RV	5847
QJ	2	QW	10	RJ	52	RW	2638
QK	0	QX	0	RK	10090	RX	167
QL	5	QY	2	RL	7389	RY	23675
QM	2	QZ	1	RM	13784	RZ	82

SA	24574	SN	2292	TA	43265	TN	708
SB	828	SO	35419	TB	350	TO	93960
SC	11984	SP	15216	TC	4364	TP	402
SD	974	SQ	756	TD	468	TQ	10
SE	78381	SR	463	TE	93748	TR	33639
SF	1342	SS	33924	TF	668	TS	23316
SG	352	ST	89864	TG	262	TT	20518
SH	38471	SU	23394	TH	278813	TU	17487
SI	43276	SV	90	TI	93130	TV	92
SJ	13	SW	3428	TJ	16	TW	5904
SK	4707	SX	22	TK	56	TX	1
SL	6101	SY	3733	TL	9126	TY	16075
SM	5257	SZ	55	TM	2926	TZ	384

UA	9765	UN	35827	VA	8309	VN	4
UB	7080	UO	575	VB	32	VO	5521
UC	13903	UP	12460	VC	13	VP	6
UD	7924	UQ	22	VD	59	VQ	0
UE	10254	UR	45242	VE	69261	VR	107
UF	1730	US	37326	VF	2	VS	124
UG	11813	UT	39512	VG	5	VT	26
UH	143	UU	48	VH	14	VU	119
UI	9214	UV	204	VI	22365	VV	16
UJ	15	UW	26	VJ	2	VW	10
UK	214	UX	266	VK	2	VX	0
UL	30847	UY	452	VL	43	VY	431
UM	9856	UZ	280	VM	3	VZ	1

WA	40313	WN	7839	XA	1682	XN	2
WB	74	WO	22791	XB	17	XO	110
WC	125	WP	56	XC	1922	XP	4222
WD	554	WQ	1	XD	1	XQ	35
WE	30432	WR	3075	XE	1870	XR	20
WF	376	WS	3552	XF	228	XS	12
WG	6	WT	270	XG	3	XT	3945
WH	33244	WU	146	XH	320	XU	218
WI	36510	WV	59	XI	2062	XV	34
WJ	4	WW	16	XJ	1	XW	12
WK	193	WX	1	XK	0	XX	61
WL	1591	WY	229	XL	50	XY	37
WM	131	WZ	3	XM	31	XZ	2

YA	1928	YN	824	ZA	874	ZN	10
YB	699	YO	28031	ZB	8	ZO	366
YC	694	YP	1252	ZC	5	ZP	2
YD	437	YQ	2	ZD	6	ZQ	0
YE	10044	YR	480	ZE	2511	ZR	22
YF	120	YS	7944	ZF	2	ZS	38
YG	77	YT	1575	ZG	8	ZT	72
YH	117	YU	48	ZH	33	ZU	226
YI	2558	YV	21	ZI	982	ZV	4
YJ	20	YW	439	ZJ	2	ZW	69
YK	40	YX	2	ZK	2	ZX	0
YL	854	YY	3	ZL	170	ZY	110
YM	2497	YZ	18	ZM	14	ZZ	416

Table 2.4 The number of occurrences of the most frequent pairs of letter.

TH	278813	NE	58807	EC	35674
HE	261612	RO	58463	AC	35595
IN	205445	LI	55782	AI	35566
ER	177348	IO	54872	OT	35470
AN	165535	IC	54807	SO	35419
RE	151685	RI	54295	OW	34029
ON	139716	BE	54251	SS	33924
ND	122632	CH	53363	GE	33658
EN	116169	RA	51713	TR	33639
AT	112716	CE	50669	LY	33407
OR	105249	MA	46721	WH	33244
ED	98884	OM	46527	PR	32529
ES	97487	HO	45845	OL	31327
OU	97414	UR	45242	EM	31107
TO	93960	EL	44622	UL	30847
TE	93748	SI	43276	NC	30718
TI	93130	TA	43265	WE	30432
AR	92888	FO	42750	ID	30154
IT	92394	EE	42696	MI	29652
NG	92114	LA	42157	IE	29580
ST	89864	IL	42146	RT	29296
IS	89464	CA	41630	CT	29062
HA	87837	PE	41018	LD	28745
AL	81689	ET	40720	YO	28031
OF	80473	NO	40422	PA	28020
SE	78381	WA	40313	IR	27571
NT	78089	UT	39512	PO	27366
LE	76126	RS	38935	KE	26971
AS	71898	SH	38471		
ME	70627	US	37326		
VE	69261	DI	36941		
CO	66483	LO	36750		
HI	64760	WI	36510		
DE	61598	AD	36201		
LL	60346	UN	35827		
EA	59502	NS	35695		

Table 2.5 The number of occurrences of pairs of letters which are not preceded by a letter.

AA	144	AN	86470	BA	10950	BN	16
AB	7481	AO	17	BB	51	BO	9972
AC	8047	AP	6366	BC	39	BP	42
AD	6336	AQ	29	BD	22	BQ	6
AE	48	AR	17857	BE	43423	BR	11735
AF	3996	AS	20920	BF	9	BS	36
AG	6638	AT	15883	BG	35	BT	33
AH	376	AU	3414	BH	70	BU	15355
AI	1766	AV	2018	BI	3365	BV	3
AJ	27	AW	2079	BJ	56	BW	60
AK	76	AX	56	BK	6	BX	5
AL	17639	AY	164	BL	7309	BY	11253
AM	4267	AZ	13	BM	9	BZ	2

CA	22714	CN	12	DA	7919	DN	9
CB	55	CO	54080	DB	130	DO	18493
CC	62	CP	16	DC	67	DP	14
CD	38	CQ	0	DD	18	DQ	4
CE	4592	CR	5511	DE	21235	DR	5804
CF	121	CS	49	DF	41	DS	50
CG	46	CT	38	DG	21	DT	21
CH	15628	CU	3228	DH	27	DU	3170
CI	2864	CV	213	DI	17190	DV	34
CJ	5	CW	7	DJ	27	DW	88
CK	20	CX	0	DK	3	DX	7
CL	9086	CY	214	DL	15	DY	251
CM	134	CZ	34	DM	59	DZ	4

EA	5341	EN	9967	FA	10411	FN	1
EB	55	EO	52	FB	4	FO	34765
EC	848	EP	288	FC	10	FP	0
ED	3479	EQ	1022	FD	20	FQ	1
EE	63	ER	1126	FE	6783	FR	16708
EF	1194	ES	2650	FF	28	FS	3
EG	550	ET	1091	FG	3	FT	26
EH	111	EU	445	FH	41	FU	4684
EI	1495	EV	6739	FI	12663	FV	1
EJ	31	EW	100	FJ	16	FW	111
EK	8	EX	11183	FK	3	FX	1
EL	3275	EY	1926	FL	4022	FY	11
EM	3511	EZ	4	FM	79	FZ	1

GA	4237	GN	32	HA	37284	HN	19
GB	29	GO	11132	HB	12	HO	15707
GC	12	GP	11	HC	7	HP	22
GD	27	GQ	0	HD	21	HQ	13
GE	6808	GR	10122	HE	38272	HR	33
GF	4	GS	3	HF	5	HS	13
GG	2	GT	124	HG	4	HT	15
GH	230	GU	2450	HH	18	HU	2984
GI	5653	GV	1	HI	21330	HV	5
GJ	0	GW	27	HJ	12	HW	18
GK	1	GX	1	HK	1	HX	4
GL	2222	GY	36	HL	15	HY	263
GM	8	GZ	0	HM	102	HZ	27

IA	87	IN	67589	JA	2733	JN	57
IB	111	IO	77	JB	15	JO	3925
IC	632	IP	45	JC	34	JP	16
ID	1300	IQ	1	JD	26	JQ	0
IE	43	IR	855	JE	925	JR	31
IF	7169	IS	21539	JF	3	JS	3
IG	184	IT	24877	JG	31	JT	11
IH	140	IU	3	JH	19	JU	4773
II	683	IV	199	JI	160	JV	0
IJ	2	IW	7	JJ	4	JW	2
IK	7	IX	16	JK	57	JX	2
IL	806	IY	2	JL	11	JY	2
IM	4244	IZ	2	JM	45	JZ	0

KA	593	KN	5583	LA	12528	LN	7
KB	3	KO	371	LB	103	LO	14829
KC	6	KP	1	LC	38	LP	14
KD	1	KQ	0	LD	21	LQ	0
KE	3267	KR	118	LE	13619	LR	4
KF	1	KS	5	LF	12	LS	72
KG	15	KT	14	LG	9	LT	503
KH	43	KU	57	LH	28	LU	1187
KI	3075	KV	1	LI	18614	LV	11
KJ	1	KW	7	LJ	5	LW	15
KK	2	KX	0	LK	1	LX	13
KL	158	KY	39	LL	1714	LY	317
KM	18	KZ	0	LM	15	LZ	1

MA	30186	MN	33	NA	4578	NN	8
MB	31	MO	17633	NB	17	NO	28624
MC	421	MP	21	NC	68	NP	2
MD	29	MQ	0	ND	356	NQ	5
ME	19757	MR	6552	NE	13362	NR	42
MF	21	MS	172	NF	30	NS	51
MG	11	MT	25	NG	45	NT	78
MH	15	MU	7454	NH	20	NU	2377
MI	12904	MV	7	NI	2191	NV	2
MJ	3	MW	10	NJ	117	NW	44
MK	18	MX	1	NK	5	NX	0
ML	107	MY	6003	NL	8	NY	211
MM	42	MZ	0	NM	9	NZ	2

OA	191	ON	28603	PA	19206	PN	30
OB	2271	OO	67	PB	26	PO	13496
OC	1596	OP	4512	PC	22	PP	741
OD	265	OQ	0	PD	18	PQ	6
OE	23	OR	15955	PE	13220	PR	24669
OF	77692	OS	189	PF	33	PS	468
OG	45	OT	4800	PG	8	PT	102
OH	1205	OU	8854	PH	2496	PU	6709
OI	299	OV	4119	PI	3962	PV	8
OJ	1	OW	2076	PJ	7	PW	39
OK	49	OX	302	PK	1	PX	2
OL	2419	OY	25	PL	7491	PY	93
OM	228	OZ	605	PM	12	PZ	6

QA	5	QN	3	RA	6341	RN	61
QB	0	QO	1	RB	16	RO	11052
QC	1	QP	1	RC	38	RP	25
QD	1	QQ	3	RD	268	RQ	6
QE	7	QR	2	RE	40643	RR	27
QF	1	QS	5	RF	11	RS	45
QG	0	QT	35	RG	22	RT	40
QH	2	QU	5242	RH	235	RU	3134
QI	0	QV	0	RI	5744	RV	7
QJ	0	QW	7	RJ	6	RW	9
QK	0	QX	0	RK	3	RX	2
QL	3	QY	2	RL	18	RY	76
QM	0	QZ	0	RM	11	RZ	5

SA	17140	SN	753	TA	8992	TN	17
SB	16	SO	22804	TB	109	TO	70790
SC	5874	SP	8151	TC	58	TP	57
SD	17	SQ	605	TD	16	TQ	10
SE	24745	SR	145	TE	10199	TR	11215
SF	13	SS	116	TF	47	TS	73
SG	18	ST	28252	TG	4	TT	41
SH	25887	SU	16041	TH	227924	TU	3259
SI	12405	SV	17	TI	7721	TV	73
SJ	4	SW	2007	TJ	5	TW	3907
SK	1195	SX	22	TK	2	TX	0
SL	3212	SY	2433	TL	10	TY	1095
SM	3211	SZ	12	TM	18	TZ	0

UA	12	UN	13553	VA	3050	VN	0
UB	55	UO	6	VB	32	VO	2934
UC	70	UP	6685	VC	5	VP	0
UD	37	UQ	1	VD	24	VQ	0
UE	5	UR	657	VE	6187	VR	6
UF	13	US	7387	VF	2	VS	33
UG	73	UT	252	VG	3	VT	11
UH	71	UU	2	VH	5	VU	64
UI	8	UV	1	VI	5004	VV	0
UJ	0	UW	7	VJ	0	VW	10
UK	29	UX	4	VK	0	VX	0
UL	178	UY	0	VL	10	VY	34
UM	117	UZ	2	VM	1	VZ	0

WA	32401	WN	5	XA	4	XN	0
WB	1	WO	18657	XB	0	XO	0
WC	45	WP	8	XC	1	XP	5
WD	15	WQ	1	XD	0	XQ	1
WE	21268	WR	2523	XE	12	XR	8
WF	32	WS	34	XF	0	XS	0
WG	2	WT	13	XG	0	XT	1
WH	32460	WU	56	XH	6	XU	1
WI	30124	WV	3	XI	64	XV	26
WJ	2	WW	5	XJ	0	XW	1
WK	12	WX	1	XK	0	XX	48
WL	6	WY	68	XL	15	XY	7
WM	13	WZ	0	XM	27	XZ	0

YA	569	YN	10	ZA	44	ZN	0
YB	3	YO	26906	ZB	0	ZO	86
YC	4	YP	3	ZC	0	ZP	0
YD	4	YQ	0	ZD	3	ZQ	0
YE	5489	YR	80	ZE	175	ZR	9
YF	20	YS	15	ZF	1	ZS	0
YG	0	YT	3	ZG	0	ZT	10
YH	3	YU	23	ZH	2	ZU	171
YI	49	YV	8	ZI	139	ZV	2
YJ	0	YW	6	ZJ	0	ZW	38
YK	0	YX	1	ZK	0	ZX	0
YL	1	YY	1	ZL	0	ZY	0
YM	4	YZ	0	ZM	0	ZZ	1

Table 2.6 The number of occurrences of the most frequent pairs of letters which are not preceded by a letter.

TH	227924	DI	17190	PL	7491
AN	86470	SA	17140	AB	7481
OF	77692	FR	16708	MU	7454
TO	70790	SU	16041	US	7387
IN	67589	OR	15955	BL	7309
CO	54080	AT	15883	IF	7169
BE	43423	HO	15707	GE	6808
RE	40643	CH	15628	FE	6783
HE	38272	BU	15355	EV	6739
HA	37284	LO	14829	PU	6709
FO	34765	LE	13619	UP	6685
WH	32460	UN	13553	AG	6638
WA	32401	PO	13496	MR	6552
MA	30186	NE	13362	AP	6366
WI	30124	PE	13220	RA	6341
NO	28624	MI	12904	AD	6336
ON	28603	FI	12663	VE	6187
ST	28252	LA	12528	MY	6003
YO	26906	SI	12405	SC	5874
SH	25887	BR	11735	DR	5804
IT	24877	BY	11253	RI	5744
SE	24745	TR	11215	GI	5653
PR	24669	EX	11183	KN	5583
SO	22804	GO	11132	CR	5511
CA	22714	RO	11052		
IS	21539	BA	10950		
HI	21330	FA	10411		
WE	21268	TE	10199		
DE	21235	GR	10122		
AS	20920	BO	9972		
ME	19757	EN	9967		
PA	19206	CL	9086		
WO	18657	TA	8992		
LI	18614	OU	8854		
DO	18493	SP	8151		
AR	17857	AC	8047		
AL	17639	DA	7919		
MO	17633	TI	7721		

Table 2.7 The number of occurrences of pairs of letters which are not followed by a letter.

AA	96	AN	27949	BA	133	BN	25
AB	329	AO	25	BB	43	BO	41
AC	128	AP	1086	BC	79	BP	18
AD	16698	AQ	5	BD	18	BQ	7
AE	92	AR	10479	BE	18617	BR	59
AF	379	AS	38631	BF	2	BS	981
AG	438	AT	46746	BG	6	BT	357
AH	397	AU	325	BH	9	BU	10
AI	54	AV	28	BI	42	BV	1
AJ	18	AW	2367	BJ	22	BW	4
AK	999	AX	651	BK	3	BX	19
AL	30586	AY	16859	BL	39	BY	12195
AM	4857	AZ	13	BM	29	BZ	2

CA	512	CN	4	DA	1017	DN	2309
CB	18	CO	923	DB	93	DO	4474
CC	19	CP	66	DC	29	DP	16
CD	9	CQ	0	DD	455	DQ	3
CE	25020	CR	49	DE	11159	DR	630
CF	29	CS	2148	DF	9	DS	11035
CG	0	CT	7896	DG	20	DT	101
CH	22907	CU	17	DH	7	DU	214
CI	68	CV	189	DI	90	DV	26
CJ	1	CW	29	DJ	7	DW	31
CK	9283	CX	1	DK	5	DX	17
CL	66	CY	2319	DL	10	DY	4336
CM	110	CZ	31	DM	6	DZ	4

EA	2336	EN	36288	FA	74	FN	1
EB	144	EO	149	FB	18	FO	56
EC	631	EP	1991	FC	45	FP	0
ED	86944	EQ	9	FD	33	FQ	1
EE	9164	ER	75471	FE	2698	FR	86
EF	897	ES	50224	FF	3363	FS	218
EG	379	ET	12444	FG	1	FT	2467
EH	96	EU	85	FH	0	FU	7
EI	99	EV	151	FI	66	FV	0
EJ	9	EW	5866	FJ	7	FW	2
EK	1017	EX	977	FK	2	FX	0
EL	5414	EY	12335	FL	65	FY	463
EM	6619	EZ	107	FM	85	FZ	1

GA	102	GN	761	HA	268	HN	958
GB	33	GO	2816	HB	6	HO	4456
GC	6	GP	2	HC	14	HP	59
GD	4	GQ	0	HD	17	HQ	9
GE	12243	GR	39	HE	169862	HR	221
GF	3	GS	4916	HF	7	HS	998
GG	261	GT	165	HG	6	HT	10329
GH	5813	GU	16	HH	11	HU	115
GI	23	GV	2	HI	110	HV	0
GJ	0	GW	3	HJ	23	HW	8
GK	1	GX	1	HK	30	HX	4
GL	96	GY	1063	HL	75	HY	2452
GM	18	GZ	0	HM	90	HZ	60

IA	1953	IN	52170	JA	52	JN	12
IB	333	IO	871	JB	10	JO	11
IC	7227	IP	2114	JC	35	JP	11
ID	10967	IQ	0	JD	24	JQ	0
IE	3158	IR	8245	JE	35	JR	31
IF	7476	IS	44226	JF	3	JS	5
IG	817	IT	27129	JG	33	JT	8
IH	18	IU	11	JH	5	JU	14
II	862	IV	167	JI	10	JV	0
IJ	7	IW	3	JJ	3	JW	7
IK	105	IX	971	JK	13	JX	2
IL	5204	IY	3	JL	10	JY	1
IM	5855	IZ	38	JM	15	JZ	0

KA	104	KN	7	LA	865	LN	53
KB	4	KO	78	LB	117	LO	319
KC	8	KP	0	LC	16	LP	1331
KD	2	KQ	0	LD	21795	LQ	0
KE	10074	KR	3	LE	28371	LR	27
KF	2	KS	4048	LF	4399	LS	6709
KG	15	KT	27	LG	6	LT	3244
KH	17	KU	26	LH	30	LU	31
KI	141	KV	1	LI	154	LV	9
KJ	1	KW	1	LJ	5	LW	12
KK	3	KX	0	LK	1375	LX	5
KL	30	KY	739	LL	32375	LY	32113
KM	18	KZ	0	LM	487	LZ	18

MA	576	MN	345	NA	745	NN	655
MB	317	MO	143	NB	15	NO	7044
MC	105	MP	895	NC	263	NP	7
MD	36	MQ	0	ND	91724	NQ	6
ME	24092	MR	4125	NE	18427	NR	41
MF	12	MS	5001	NF	80	NS	16404
MG	33	MT	72	NG	72720	NT	31635
MH	7	MU	44	NH	19	NU	105
MI	111	MV	10	NI	228	NV	3
MJ	0	MW	10	NJ	115	NW	39
MK	20	MX	1	NK	4163	NX	7
ML	103	MY	5719	NL	16	NY	8041
MM	55	MZ	0	NM	6	NZ	39

OA	38	ON	68430	PA	287	PN	11
OB	732	OO	1931	PB	13	PO	65
OC	160	OP	2360	PC	40	PP	748
OD	5983	OQ	0	PD	30	PQ	6
OE	259	OR	43955	PE	3206	PR	75
OF	71954	OS	551	PF	14	PS	3817
OG	951	OT	14564	PG	14	PT	2351
OH	1146	OU	19690	PH	571	PU	21
OI	22	OV	206	PI	23	PV	1
OJ	7	OW	15017	PJ	1	PW	12
OK	3696	OX	547	PK	3	PX	5
OL	3216	OY	1104	PL	55	PY	914
OM	13223	OZ	587	PM	22	PZ	2

QA	2	QN	4	RA	1722	RN	3788
QB	0	QO	0	RB	191	RO	437
QC	1	QP	1	RC	170	RP	218
QD	1	QQ	3	RD	8902	RQ	5
QE	10	QR	1	RE	48977	RR	200
QF	1	QS	5	RF	121	RS	23778
QG	0	QT	2	RG	324	RT	8941
QH	1	QU	15	RH	35	RU	39
QI	1	QV	0	RI	284	RV	8
QJ	0	QW	1	RJ	1	RW	14
QK	0	QX	0	RK	5089	RX	104
QL	5	QY	2	RL	910	RY	21581
QM	2	QZ	0	RM	2990	RZ	36

SA	403	SN	1305	TA	925	TN	74
SB	15	SO	7279	TB	16	TO	64756
SC	145	SP	207	TC	653	TP	18
SD	27	SQ	72	TD	407	TQ	10
SE	24902	SR	46	TE	15892	TR	144
SF	14	SS	13686	TF	13	TS	21617
SG	15	ST	27181	TG	8	TT	1198
SH	5239	SU	40	TH	26207	TU	34
SI	55	SV	0	TI	319	TV	74
SJ	1	SW	51	TJ	1	TW	19
SK	1242	SX	18	TK	7	TX	0
SL	154	SY	808	TL	33	TY	14509
SM	1170	SZ	10	TM	32	TZ	183

UA	42	UN	1511	VA	223	VN	0
UB	1134	UO	23	VB	32	VO	54
UC	81	UP	6140	VC	1	VP	5
UD	479	UQ	2	VD	34	VQ	0
UE	4077	UR	11419	VE	24903	VR	3
UF	116	US	7890	VF	1	VS	40
UG	563	UT	22377	VG	0	VT	19
UH	22	UU	0	VH	7	VU	7
UI	35	UV	11	VI	67	VV	0
UJ	1	UW	4	VJ	2	VW	10
UK	34	UX	112	VK	1	VX	0
UL	2811	UY	305	VL	0	VY	389
UM	1826	UZ	8	VM	0	VZ	0

WA	41	WN	6643	XA	4	XN	0
WB	6	WO	2861	XB	0	XO	20
WC	44	WP	1	XC	0	XP	5
WD	237	WQ	0	XD	0	XQ	1
WE	6662	WR	191	XE	57	XR	0
WF	4	WS	2892	XF	0	XS	0
WG	2	WT	8	XG	0	XT	1989
WH	20	WU	4	XH	1	XU	0
WI	14	WV	58	XI	133	XV	4
WJ	1	WW	0	XJ	0	XW	1
WK	38	WX	1	XK	0	XX	17
WL	222	WY	25	XL	3	XY	20
WM	47	WZ	0	XM	0	XZ	0

YA	166	YN	108	ZA	46	ZN	0
YB	4	YO	37	ZB	3	ZO	144
YC	0	YP	2	ZC	0	ZP	0
YD	127	YQ	0	ZD	0	ZQ	0
YE	699	YR	89	ZE	821	ZR	1
YF	3	YS	4362	ZF	1	ZS	34
YG	1	YT	9	ZG	0	ZT	50
YH	1	YU	15	ZH	0	ZU	91
YI	5	YV	0	ZI	33	ZV	0
YJ	0	YW	0	ZJ	0	ZW	1
YK	1	YX	1	ZK	0	ZX	0
YL	35	YY	1	ZL	1	ZY	99
YM	17	YZ	5	ZM	0	ZZ	55

Table 2.8 The number of occurrences of the most frequent pairs of letters which are not followed by a letter.

HE	169862	AY	16859	EW	5866
ND	91724	AD	16698	IM	5855
ED	86944	NS	16404	GH	5813
ER	75471	TE	15892	MY	5719
NG	72720	OW	15017	EL	5414
OF	71954	OT	14564	SH	5239
ON	68430	TY	14509	IL	5204
TO	64756	SS	13686	RK	5089
IN	52170	OM	13223	MS	5001
ES	50224	ET	12444	GS	4916
RE	48977	EY	12335	AM	4857
AT	46746	GE	12243	DO	4474
IS	44226	BY	12195	HO	4456
OR	43955	UR	11419	LF	4399
AS	38631	DE	11159	YS	4362
EN	36288	DS	11035	DY	4336
LL	32375	ID	10967	NK	4163
LY	32113	AR	10479	MR	4125
NT	31635	HT	10329	UE	4077
AL	30586	KE	10074	LS	4048
LE	28371	CK	9283	PS	3817
AN	27949	EE	9164	RN	3788
ST	27181	RT	8941	OK	3696
IT	27129	RD	8902	FF	3363
TH	26207	IR	8245		
CE	25020	NY	8041		
VE	24903	CT	7896		
SE	24902	US	7890		
ME	24092	IF	7476		
RS	23778	SO	7279		
CH	22907	IC	7227		
UT	22377	NO	7044		
LD	21795	LS	6709		
TS	21617	WE	6662		
RY	21581	WN	6643		
OU	19690	EM	6619		
BE	18617	UP	6140		
NE	18427	OD	5983		

Table 2.9 The number of occurrences of the most frequent groups of three letters.

THE	189879	IVE	14797	TTE	11157
AND	82058	OUL	14753	ROM	11127
ING	76397	STA	14586	UND	11063
ION	48183	EVE	14558	FRO	11050
ENT	40419	ONE	14424	INE	10957
TIO	38621	OVE	14357	HAN	10874
HER	38412	ULD	14346	BUT	10812
FOR	35811	PER	14321	MIN	10741
HAT	28728	INT	14271	ICA	10687
TER	28015	OME	13686	OTH	10620
ATI	27815	TIN	13852	HAV	10605
ERE	27116	AVE	13698	RED	10358
YOU	26535	EST	13684	ITI	10345
THA	25686	EAR	13630	WHI	10276
ALL	24583	OUT	13576	USE	10233
HIS	23201	SHE	13561	ANT	10036
VER	22417	HOU	13483	HAD	10033
ERS	21707	GHT	13367	HEN	10029
THI	20374	DER	13283	NDE	10011
MEN	19565	AIN	13202	PRE	9983
ITH	19339	ECT	13136	NTE	9975
ATE	19278	IND	13018	EEN	9899
WAS	19101	HIN	12948	ARD	9849
WIT	18608	MAN	12818	ORT	9679
CON	18556	BLE	12752	CTI	9599
RES	18270	IST	12721	STI	9552
ARE	17802	IGH	12061	WOR	9507
OUR	17801	STR	11906	AGE	9465
COM	17589	TRA	11746	ANC	9407
NCE	16841	OUN	11627	TIC	9399
TED	16541	COU	11511	RAT	9368
ILL	16489	IDE	11456	RIN	9319
ONS	16359	PAR	11430	RAN	9235
NOT	16123	ICE	11377	WER	9203
PRO	15222	LIN	11371	ICH	9118
ESS	15107	ART	11163	END	9116
REA	15068	STE	11162	WHE	9003

ABL	8970	ITY	7817	SON	6870
ORE	8923	AST	7758	OND	6868
SHO	8819	HEY	7750	ITE	6806
CAL	8819	NOW	7748	SIO	6805
URE	8787	AME	7728	ACH	6732
CHA	8762	LAN	7687	BLI	6676
THO	8757	EME	7683	IRE	6631
IAL	8750	CES	7658	SPE	6617
UGH	8724	NIN	7650	NTR	6615
KIN	8721	EAD	7632	ARY	6610
ACT	8704	ORD	7620	STO	6591
ELL	8664	NAL	7609	POS	6554
ASS	8488	ESE	7606	TIM	6488
UST	8475	ERI	7595	WHA	6474
BER	8471	AID	7553	ERY	6468
LIT	8409	SIN	7517	SOM	6454
TUR	8367	LLY	7502	LAT	6405
APP	8342	EAT	7440	INC	6388
DIN	8325	OOK	7401	TAT	6350
OUS	8302	OUG	7383	SEN	6341
SED	8297	OWN	7338	NGE	6333
REE	8252	REN	7323	RIE	6331
ENC	8223	CIA	7290	GRE	6321
IES	8223	ITT	7279	CAT	6318
TOR	8161	WIL	7254	OLD	6274
VEN	8156	OSE	7250	CHI	6264
PLE	8073	AKE	7247	OFF	6237
LLE	8066	DIS	7238	TRE	6228
REC	8064	PLA	7205	ISH	6226
ANY	8036	SER	7155	TAN	6199
TEN	8032	ERA	7100	HAR	6197
ROU	8027	SSI	7090	ACK	6196
HIC	7972	OMM	7016	HES	6181
LEA	7968	DEN	7005	RAI	6141
CHE	7960	IME	6985	SAI	6133
CAN	7956	NED	6983	MOR	6130
LES	7943	LOW	6935	HIM	6066
EAS	7930	HEA	6930	REP	6050
INS	7832	NTS	6912	ONA	6049
NTI	7828	ONT	6879	WAR	6045

NDI	6044	OLI	5528
ORK	6037	MPL	5513
UNT	6025	UCH	5487
MBE	5988	ECO	5474
RIT	5985	ERN	5461
BEE	5979	FIC	5437
WOU	5964	TRI	5431
WAY	5960	HAS	5411
LED	5953	OST	5378
ABO	5941	OPE	5373
SOC	5921	TIV	5361
WHO	5886	ACE	5358
ISE	5878	SHA	5351
NES	5862	ORM	5320
DED	5853	HEM	5285
GRA	5852	OLL	5277
MAT	5831	DAY	5274
SSE	5801	HAL	5262
POR	5799	SEL	5253
OMP	5797	SID	5238
SIT	5757	RMA	5234
SEE	5743	CAR	5223
RIC	5736	ENE	5217
NER	5736	LIS	5213
BOU	5724	TAL	5209
PRI	5712	LON	5191
OCI	5699	MAR	5180
LIC	5685	EED	5148
TON	5673	SES	5137
ADE	5663	UAL	5128
NAT	5658		
EET	5631		
AIL	5622		
ANG	5603		
OOD	5587		
ASE	5585		
HIL	5578		
UNI	5553		
PEN	5551		

Table 2.10 The number of occurrences of the most frequent groups of three letters which are not preceded by a letter.

THE	174853	WHA	6362	LIK	4214
AND	67987	OUT	6117	MAR	4200
FOR	28190	SOM	6094	INS	4187
YOU	26457	SAI	6018	THR	4168
THA	25083	BEE	5969	KNO	4166
WAS	19033	WOU	5950	OVE	4084
WIT	17849	REA	5931	POL	4075
CON	16770	HIM	5898	EXP	4051
THI	15589	WHO	5869	UND	4004
COM	14769	RES	5751	HOU	3952
NOT	14093	EVE	5726	UNI	3939
PRO	12878	WER	5685	USE	3933
HIS	12303	OFF	5655	SPE	3923
HER	11505	SEE	5618	MAY	3861
ARE	11493	ANY	5606	BRA	3845
SHE	10959	HEA	5591	INC	3821
FRO	10927	STR	5539	FIR	3796
COU	10223	MOR	5276	VER	3749
HAV	10205	REP	5248	STO	3747
WHI	10150	PLA	5215	BLI	3701
BUT	10067	TIM	5206	LOO	3667
HAD	9635	TRA	5176	FIN	3620
ALL	9154	REC	5156	ASS	3618
STA	8964	APP	5084	NOW	3605
INT	8793	THO	5021	NEW	3590
WOR	8769	SHA	4957	PRI	3574
WHE	8488	MIN	4946	CHI	3548
SHO	8392	ABO	4905	LON	3533
PAR	7494	CAR	4712	ONL	3457
PER	7341	OTH	4703	IND	3446
WIL	7132	LEA	4616	SUC	3445
PRE	7014	SEC	4614	COL	3431
DIS	6888	HAS	4556	ACC	3368
CHA	6872	HAN	4533	HOW	3349
ONE	6630	MUS	4380	BRI	3302
CAN	6573	SER	4362	WEL	3283
MAN	6544	SOC	4312	CLA	3251

GRE	3249	DEP	2596	SUR	2218
MAK	3235	FOL	2572	CAL	2215
HEL	3218	OPE	2567	SOU	2198
DON	3209	DEC	2559	FOU	2193
TAK	3170	STI	2558	LIF	2190
BAC	3167	GOO	2539	ROA	2187
POS	3166	BEC	2524	BEF	2175
STU	3142	HAR	2515	FEE	2156
YEA	3071	BET	2468	CAM	2143
CAS	3067	SCH	2458	INF	2128
GRA	3056	SUP	2433	OLD	2114
GIV	3028	CEN	2433	COR	2083
WAR	3018	NEE	2423	HOL	2067
FAC	2999	MRS	2423	TEA	2062
DID	2988	MIS	2413	ATT	2060
DOW	2969	FRE	2399	CHE	2049
ACT	2961	BRO	2398	END	2048
TOO	2931	LAN	2386	MEN	2043
MAD	2919	SUB	2350	ASK	2040
MEE	2888	REG	2341	EAC	2024
IMP	2888	LET	2337	BEL	1990
DES	2870	OUR	2333	WIN	1978
AGA	2858	CLO	2328	WAT	1966
TWO	2855	PAS	2327	ALS	1955
MEM	2792	DAY	2314	VIS	1948
REM	2717	WAY	2313	BOO	1942
AFT	2713	ENG	2311	TUR	1937
GRO	2707	NAT	2306	DEV	1934
MEA	2695	GEN	2293	WAL	1923
PEO	2692	RIG	2288	QUI	1920
TEL	2651	JUS	2284	EYE	1909
REL	2643	EMP	2273	EXC	1907
LIT	2639	WAN	2245	MOS	1904
ITS	2638	SIN	2241	QUE	1901
DEA	2613	GET	2235	STE	1900
MON	2612	SEN	2223	COV	1897
MAT	2599	SAY	2222	TRE	1872

SAM	1870	ROW	1645	BAR	1435
OWN	1856	MOT	1639	PLE	1434
NEV	1856	NUM	1612		
ROO	1849	REV	1610		
PUB	1840	WOM	1597		
AWA	1832	BEA	1587		
BEI	1829	REQ	1577		
HAL	1827	NEX	1576		
SIG	1810	TRU	1574		
MUC	1808	WHY	1568		
DIF	1804	SEA	1568		
FRI	1786	TER	1565		
ADD	1778	AGR	1558		
LIN	1777	DIR	1556		
LAS	1742	ELE	1555		
HOM	1732	FLO	1540		
CLE	1730	PUT	1536		
PUR	1704	SYS	1521		
BRE	1701	MIL	1506		
KIN	1698	RET	1499		
INV	1692	BEG	1498		
ADV	1692	MOV	1483		
ORD	1691	EXT	1482		
BOT	1685	PAI	1481		
RAT	1682	ROU	1479		
LOC	1679	FAR	1479		
ENT	1678	PAY	1475		
REF	1671	EDU	1471		
AUT	1670	SAT	1469		
EAR	1669	CRO	1468		
LIV	1665	ORG	1460		
MAC	1664	EXA	1456		
WRI	1659	SID	1455		
BUS	1657	PAT	1455		
SET	1650	MET	1455		
NOR	1650	PAG	1444		
UNT	1649	DET	1441		
AGE	1646	LIG	1440		

Table 2.11 The number of occurrences of the most frequent groups of three letters which are not followed by a letter.

THE	143113	SED	8234	ARD	5066
AND	74164	ICH	8014	UCH	5050
ING	67320	IES	7996	HIM	5004
ION	33177	ESS	7969	CAL	5002
HAT	27896	OME	7897	OSE	4877
FOR	23401	ITY	7801	IME	4871
ENT	21655	ATE	7796	CES	4861
HIS	21543	HEY	7698	EAR	4681
HER	21060	IVE	7612	AST	4674
YOU	19284	LLY	7463	AME	4618
WAS	17789	ICE	7316	AKE	4604
ERE	17355	ORE	7154	EIR	4587
TED	16347	AID	7111	IDE	4566
ITH	15806	IND	7003	UGH	4537
ERS	14327	NED	6930	UND	4536
ALL	14012	NTS	6889	NLY	4476
TER	13743	IAL	6591	LES	4461
ULD	12861	ANY	6550	OLD	4374
ARE	12582	DER	6541	OOD	4372
NCE	11937	ARY	6512	PLE	4371
AVE	11249	MAN	6414	WHO	4349
NOT	11117	OWN	6253	HAS	4336
ONE	10922	AIN	6208	SES	4327
OUR	10732	NOW	6206	ELY	4312
ONS	10708	USE	6153	NDS	4252
OUT	10343	URE	5745	DAY	4219
GHT	10052	AGE	5696	INE	4194
ROM	9907	NAL	5660	ACK	4162
ILL	9818	CAN	5652	IKE	4157
SHE	9810	DED	5636	WAY	4115
VER	9601	ERY	5531	TES	4041
BLE	9592	ANT	5440	NGS	4034
HAD	9405	UST	5358	NTO	4033
BUT	9313	LED	5335	BER	4019
EEN	9302	EST	5194	SON	4012
HEN	9046	ELL	5156	TON	3961
RED	9018	KED	5090	VEN	3919

ACE	3916	ORD	2881	NER	2164
HEM	3900	MES	2881	RCH	2139
ADE	3814	ACT	2857	ALS	2130
OST	3811	TWO	2833	AIR	2130
EAD	3797	TRY	2784	REN	2107
DON	3790	TOR	2782	NCH	2103
HED	3770	ISE	2779	OFF	2058
ORT	3758	RST	2756	OOR	2054
VED	3707	UAL	2751	ASS	2053
ECT	3670	REE	2741	NGE	2051
OOK	3645	IRE	2708	DID	2037
MAY	3626	IST	2699	ELD	2034
ISH	3611	SEE	2688	INS	2007
OUS	3608	OVE	2657	GET	1994
ITS	3604	MED	2580	EXT	1987
AYS	3578	EET	2575	HES	1979
RAL	3549	GER	2564	ORS	1955
ASE	3549	MEN	2557	NES	1955
TLY	3548	INK	2541	ICS	1947
IED	3541	CED	2518	OWS	1933
ONG	3499	TEE	2480	ETY	1929
ITE	3430	LOW	2477	DGE	1929
NEW	3321	YES	2447	ROW	1915
PED	3305	EAT	2439	LSO	1912
END	3289	ICK	2436	LET	1901
RDS	3280	MRS	2426	ILY	1887
ORK	3234	TAL	2415	OOM	1832
HOW	3231	RSE	2412	PUT	1830
ACH	3225	ILE	2390	TOO	1795
TLE	3222	TEN	2353	GES	1781
ESE	3201	LLE	2333	EMS	1747
ART	3187	OND	2319	TIC	1737
ELF	3151	OAD	2311	RTS	1733
VES	3124	IFE	2308	DEN	1723
PER	3013	FUL	2306	ARK	1723
STS	2985	RLY	2291	LAR	1715
ORY	2985	RES	2282	OES	1708
EED	2954	WER	2255	SAY	1686
HAN	2913	INT	2207	RGE	1675
ARS	2887	GED	2194	RTY	1654

CTS	1654	NEY	1368
DES	1647	UNG	1365
OLE	1637	PLY	1360
EPT	1627	APS	1352
KEN	1595	EAL	1335
UTE	1589	BLY	1333
IER	1586	SET	1320
ISS	1580	HAM	1311
ERN	1571	WED	1291
WHY	1562	IAN	1290
ODY	1554	UNT	1289
OON	1551	APE	1284
SIC	1542	ALE	1262
ANS	1537	LAY	1257
ETS	1536	ELP	1255
OOL	1532	UTH	1249
EEP	1531	GOT	1248
LLS	1525	ORM	1246
LEY	1517	LIC	1244
OTH	1498	LER	1241
ULL	1489	CIL	1224
TIL	1482	PEN	1207
TEM	1470	DIE	1204
RTH	1467	RMS	1198
ADY	1464	URN	1179
KER	1449	URS	1173
EAN	1440	BED	1172
TCH	1438	HIP	1169
RRY	1432	OPE	1164
OCK	1429	OTE	1162
OSS	1424	DLY	1127
EES	1418	ULT	1118
ANK	1417		
ANE	1415		
ATH	1397		
EFT	1380		
TRE	1377		

Table 2.12 The number of occurrences of the most frequent groups of three letters in alphabetic order. Groups which occur in Table 2.9 with a frequency of less than 10,000 have been excluded.

	Not preceded by a letter	Anywhere in word	Not followed by a letter
AIN		13202	6208
ALL	9154	24583	14012
AND	67987	82058	74164
ANT		10036	5440
ARE	11493	17802	12582
ART		11163	3187
ATE		19278	7796
ATI		27815	
AVE		13698	11249
BLE		12752	9592
BUT	10067	10812	9313
COM	14769	17589	
CON	15770	18556	
COU	10223	11511	
DER		13283	6541
EAR	1669	13630	4681
ECT		13136	3670
ENT	1678	40419	21655
ERE		27116	17355
ERS		21707	14327
ESS		15107	7969
EST		13684	5194
EVE	5726	14558	
FOR	28190	35811	23401
FRO	10927	11050	
GHT		13367	10052
HAD	9635	10033	9405
HAN	4533	10874	2913
HAT		28728	27896
HAV	10205	10605	
HEN		10029	9046
HER	11505	38412	21060
HIN		12948	

	Not preceded by a letter	Anywhere in word	Not followed by a letter
HIS	12303	23201	21543
HOU	3952	13483	
ICA		10687	
ICE		11377	7316
IDE		11456	4566
IGH		12061	
ILL		16489	9818
IND	3446	13018	7003
INE		10957	4194
ING		76397	76320
INT	8793	14271	2207
ION		48183	33177
IST		12721	2699
ITH		19339	15806
ITI		10345	
IVE		14797	7612
LIN	1777	11371	
MAN	6544	12818	6414
MEN	2043	19565	2557
MIN	4946	10741	
NCE		16841	11937
NDE		10011	
NOT	14093	16123	11117
OME		13868	7897
ONE	6630	14424	10922
ONS		16359	10708
OTH	4703	10620	1498
OUL		14753	
OUN		11627	
OUR	2333	17801	10732
OUT	6117	13576	10343
OVE	4084	14357	2657
PAR	7494	11430	
PER	7341	14321	3013
PRO	12878	15222	
REA	5931	15068	
RED		10358	9018

	Not preceded by a letter	Anywhere in word	Not followed by a letter
RES	5751	18270	2282
ROM		11127	9907
SHE	10959	13561	9810
STA	8964	14586	
STE	1900	11162	
STR	5539	11906	
TED		16541	16347
TER	1565	28015	13743
THA	25083	25686	
THE	174853	189879	143113
THI	15589	20374	
TIN		13852	
TIO		38621	
TRA	5176	11746	
TTE		11157	
ULD		14346	12861
UND	4004	11063	4536
USE	3933	10233	6153
VER	3749	22417	9601
WAS	19033	19101	17789
WHI	10150	10276	
WIT	17849	18608	
YOU	26457	26535	19284

Table 2.13 The number of occurrences of specific groups of letters.

AR	92888	BENEATH	139
AS	71898	CH	53363
AND	82058	CC	5326
ANCE	6451	CON	18556
ALLY	5886	COM	17589
ALSO	1909	CAN	7956
ATION	21398	COULD	3786
ABOUT	4089	CHILD	2525
AFTER	2766	CANNOT	621
AGAIN	2812	CHILDREN	1626
ABOVE	748	CONCEIVE	29
ALWAYS	1336	CHARACTER	482
ACROSS	624	CONCEIVING	0
ALMOST	595	DO	23764
AGAINST	1067	DD	4652
ALREADY	624	DIS	7238
ALTHOUGH	455	DAY	5274
AFTERNOON	344	DECLARE	106
ACCORDING	270	DECEIVE	38
AFTERWARD	97	DECLARING	13
ALTOGETHER	77	DECEIVING	9
BY	12457	ER	177348
BE	54251	ED	98884
BB	1452	EN	116169
BLE	12752	EA	59502
BUT	10812	ENCE	5856
BLIND	3591	EVER	7031
BELOW	420	EVERY	2079
BEFORE	2153	EITHER	904
BEHIND	642	ENOUGH	711
BESIDE	310	FF	13158
BEYOND	249	FOR	35811
BETWEEN	1528	FUL	4529
BRAILLE	1936	FROM	9885
BECAUSE	1420	FIRST	2391

FRIEND	972
FATHER	717
GH	22062
GG	2758
GO	13900
GOOD	2483
GREAT	1560
HIS	23201
HAD	10033
HIM	6066
HAVE	9697
HERE	13138
HIMSELF	895
HERSELF	440
IN	205445
IT	92394
ING	76397
ITY	7817
ITS	4042
INTO	3985
ITSELF	376
IMMEDIATE	426
JUST	2549
KNOW	3927
KNOWLEDGE	473
LIKE	4427
LESS	2542
LORD	677
LITTLE	2219
LETTER	1243
MENT	15709
MORE	3963
MUST	2581
MUCH	1793
MANY	1780
MOTHER	1040
MYSELF	604
NOT	16123
NESS	3113
NAME	1367

NEITHER	179
NECESSARY	726
OF	80473
OU	97414
OW	34029
ONE	14424
OUT	13576
ONG	5018
OUND	5204
OUNT	3238
OUGHT	2567
ONESELF	27
O'CLOCK	175
OURSELVES	94
PART	6354
PAID	642
PEOPLE	2693
PERHAPS	900
PERCEIVE	25
PERCEIVING	3
QUITE	857
QUICK	554
QUESTION	1373
RIGHT	2852
RATHER	818
RECEIVE	974
REJOICE	36
RECEIVING	109
REJOICING	6
ST	89864
SH	38471
SO	35419
SION	6712
SOME	6209
SAID	5613
SUCH	2833
SHALL	2716
STILL	1670
SHOULD	4582
SPIRIT	284

TO	93960
TH	278813
THE	189879
THAT	21589
TION	38398
THIS	10413
TIME	5763
THERE	7942
THEIR	4526
THESE	2843
THOSE	1776
TODAY	277
THROUGH	2004
TONIGHT	96
THYSELF	3
TOGETHER	879
TOMORROW	144
THEMSELVES	408
US	37326
UPON	999
UNDER	3692
VERY	5371
WH	33244
WAS	19101
WITH	17598
WILL	6688
WERE	5816
WORK	5527
WORD	1413
WHICH	7156
WOULD	5864
WHERE	2984
WORLD	1133
WHOSE	378
YOU	26535
YOUR	5862
YOUNG	1066
YOURSELF	348
YOURSELVES	12

Appendix 3

Analysis of Brown Corpus

The Standard Corpus of Present-Day Edited American English is described in Kucera H. and Francis W.N. "Computational Analysis of Present-Day American English", Brown University Press, Providence, Rhode Island, USA, 1967, ISBN 0 87057 105 2, 424 pp. The corpus contains 1,014,232 words of natural-language text; a word is defined as a continuous string of letters, numerals, punctuation marks, and other symbols (i.e., of graphemes), uninterrupted by space.

The contents of the corpus are:-

Subject type	Number of samples
Press: Reportage	44
Press: Editorial	27
Press: Reviews	17
Religion	17
Skills and Hobbies	36
Popular Lore	48
Belles Lettres, Biography, etc.	75
Miscellaneous	30
Learned and Scientific Writings	80
Fiction: General	29
Fiction: Mystery and Detective	24
Fiction: Science	6
Fiction: Adventure and Western	29
Fiction: Romance and Love Story	29
Humor	9

Table 3.1 The frequency of contractions in order of space saved over uncontracted braille. An asterisk indicates a single cell contraction. The spaces saved by using IN, INTO and BY contractions are counted under these contractions and not as (SPACE).

	Contraction	Number of occurrences	Total no. of spaces saved over uncontracted braille	Cumulative percentage of space saved
1	*THE	82387	164774	11.54
2	*AND	34024	68048	16.31
3	*ING	30063	60126	20.52
4	*IN	54678	54678	24.35
5	*ER	53369	53369	28.08
6	*TO	25974	52948	31.72
7	*ED	45477	45477	34.91
8	*OF	39433	39433	37.67
9	*EN	39369	39369	40.43
10	*ST	34608	34608	42.85
11	*THAT	10778	32334	45.11
12	*AR	29436	29436	47.18
13	*FOR	14431	28862	49.20
14	ATION	9180	27540	51.13
15	*WITH	8296	24888	52.87
16	*EA	21390	21390	54.37
17	*WAS	9607	19214	55.71
18	*TH	16021	16021	56.84
19	TION	7805	15610	57.93
20	*THIS	5139	15417	59.01
21	*CON	7706	15412	60.09
22	*CH	14927	14937	61.13
23	*OU	14640	14640	62.16
24	(SPACE)	14347	14347	63.16
25	*WHICH	3557	14228	64.16
26	*FROM	4357	13071	65.08
27	*HIS	6468	12936	65.98
28	*SH	12279	12279	66.84
29	MENT	6002	12004	67.68
30	*HAVE	3941	11823	68.51

Contraction	Number of occurrences	Total no. of spaces saved over uncontracted braille	Cumulative percentage of space saved
31 *OW	11788	11788	69.34
32 *COM	5617	11234	70.12
33 *BY	5167	10334	70.85
34 *BLE	4912	9824	71.54
35 *WH	9759	9759	72.22
36 *WERE	3207	9621	72.89
37 THERE	3173	9519	73.56
38 *NOT	4618	9236	74.21
39 *IT	9080	9080	74.84
40 *BUT	4380	8760	75.46
41 WOULD	2849	8547	76.05
42 THEIR	2692	8076	76.62
43 *BE	7689	7689	77.16
44 *AS	7247	7247	77.67
45 *YOU	3622	7244	78.17
46 *WILL	2249	6747	78.65
47 *MORE	2214	6642	79.11
48 ENCE	3078	6156	79.54
49 *GH	6093	6093	79.97
50 ONE	6009	6009	80.39
51 SION	2972	5944	80.81
52 ALLY	2930	5860	81.22
53 EVER	2889	5778	81.62
54 SOME	2850	5700	82.02
55 THROUGH	1119	5595	82.41
56 *DIS	2754	5508	82.80
57 ABOUT	1830	5490	83.18
58 ANCE	2713	5426	83.56
59 COULD	1776	5328	83.94
60 INTO	1771	5313	84.31
61 HAD	5235	5235	84.67
62 OUND	2546	5092	85.03
63 TIME	2372	4744	85.36
64 THESE	1571	4713	85.69
65 PART	2209	4418	86.00

	Contraction	Number of occurrences	Total no. of spaces saved over uncontracted braille	Cumulative percentage of space saved
66	BECAUSE	882	4410	86.31
67	*PEOPLE	868	4340	86.62
68	*OUT	2168	4336	86.92
69	UNDER	1411	4233	87.22
70	FIRST	1387	4161	87.51
71	BEFORE	1018	4072	87.79
72	ITY	4066	4066	88.08
73	*LIKE	1338	4014	88.36
74	SAID	1964	3928	88.63
75	*CAN	1929	3858	88.90
76	WHERE	1259	3777	89.17
77	BETWEEN	730	3650	89.42
78	SHOULD	911	3644	89.68
79	LITTLE	850	3400	89.92
80	OUGHT	1113	3339	90.15
81	OUNT	1666	3332	90.38
82	AFTER	1105	3315	90.62
83	NESS	1595	3190	90.84
84	RIGHT	1046	3138	91.06
85	*STILL	783	3132	91.28
86	QUESTION	520	3120	91.50
87	WORK	1514	3028	91.71
88	*FF	2781	2781	91.90
89	ONG	2724	2724	92.09
90	WORLD	877	2631	92.28
91	HIM	2616	2616	92.46
92	*JUST	872	2616	92.65
93	SUCH	1301	2602	92.83
94	THOSE	849	2547	93.01
95	AGAINST	627	2508	93.18
96	KNOW	1207	2414	93.35
97	HIMSELF	603	2412	93.52
98	*VERY	793	2379	93.69
99	CHILDREN	385	2310	93.85

	Contraction	Number of occurrences	Total no. of spaces saved over uncontracted braille	Cumulative percentage of space saved
100	CHARACTER	323	2261	94.01
101	MANY	1126	2252	94.16
102	*CC	2195	2195	94.32
103	ALSO	1071	2142	94.47
104	GREAT	1026	2052	94.61
105	MUST	1017	2034	94.75
106	*SO	2032	2032	94.90
107	*EVERY	492	1968	95.03
108	YOUR	947	1894	95.17
109	MUCH	943	1886	95.30
110	GOOD	935	1870	95.43
111	*RATHER	372	1860	95.56
112	ITS	1858	1858	95.69
113	DAY	1846	1846	95.82
114	AGAIN	580	1740	95.94
115	*ENOUGH	339	1695	96.06
116	FRIEND	405	1620	96.17
117	THEMSELVES	270	1620	96.29
118	HERE	808	1616	96.40
119	ALTHOUGH	318	1590	96.51
120	*DD	1532	1532	96.62
121	LESS	737	1474	96.72
122	YOUNG	475	1425	96.82
123	NECESSARY	237	1422	96.92
124	ALWAYS	459	1377	97.02
125	*DO	1373	1373	97.11
126	TOGETHER	271	1355	97.21
127	FUL	1340	1340	97.30
128	ALMOST	432	1296	97.39
129	MOTHER	319	1276	97.48
130	SPIRIT	319	1276	97.57
131	PERHAPS	307	1228	97.66
132	IMMEDIATE	204	1224	97.74
133	ITSELF	305	1220	97.83
134	ACCORDING	170	1190	97.91
135	*KNOWLEDGE	145	1160	97.99

	Contraction	Number of occurrences	Total no. of spaces saved over uncontracted braille	Cumulative percentage of space saved
136	WORD	574	1148	98.07
137	EITHER	284	1136	98.15
138	*QUITE	282	1128	98.23
139	RECEIVE	278	1112	98.31
140	NAME	549	1098	98.39
141	LETTER	274	1096	98.46
142	*GG	1093	1093	98.54
143	ALREADY	273	1092	98.62
144	*SHALL	268	1072	98.69
145	FATHER	266	1064	98.77
146	BEHIND	258	1032	98.84
147	CANNOT	258	1032	98.91
148	UPON	510	1020	98.98
149	*CHILD	251	1004	99.05
150	TODAY	324	972	99.12
151	ACROSS	281	843	99.18
152	WHOSE	251	753	99.23
153	AFTERNOON	122	732	99.28
154	BEYOND	177	708	99.33
155	*US	678	678	99.38
156	*GO	633	633	99.43
157	ABOVE	302	604	99.47
158	BESIDE	144	576	99.51
159	NEITHER	141	564	99.55
160	QUICK	179	537	99.59
161	HERSELF	125	500	99.62
162	*BB	454	454	99.65
163	TOMORROW	74	444	99.68
164	BELOW	147	441	99.71
165	MYSELF	129	387	99.74
166	YOURSELF	73	365	99.77
167	DECLARE	87	348	99.79
168	OURSELVES	66	330	99.81
169	PAID	165	330	99.84
170	BENEATH	57	285	99.86
171	LORD	134	268	99.88

	Contraction	Number of occurrences	Total no. of spaces saved over uncontracted braille	Cumulative percentage of space saved
172	CONCEIVE	46	230	99.89
173	BLIND	76	228	99.91
174	ALTOGETHER	30	210	99.92
175	TONIGHT	41	205	99.94
176	O'CLOCK	46	184	99.95
177	AFTERWARD	30	180	99.96
178	RECEIVING	34	170	99.98
179	PERCEIVE	31	124	99.98
180	DECLARING	11	55	99.99
181	YOURSELVES	8	48	99.99
182	DECEIVE	7	28	99.99
183	DECEIVING	5	25	99.99
184	ONESELF	5	20	100.00
185	REJOICING	4	20	100.00
186	CONCEIVING	2	12	100.00
187	REJOICE	3	12	100.00
188	PERCEIVING	1	5	100.00
189	BRAILLE	1	4	100.00
190	THYSELF	0	0	100.00
		Total	1427829	

Table 3.2 The number of occurrences of pairs of letters.

AA	67	AN	73026	BA	6329	BN	16
AB	8047	AO	192	BB	573	BO	8212
AC	16465	AP	6742	BC	30	BP	9
AD	16331	AQ	64	BD	41	BQ	0
AE	348	AR	39812	BE	22361	BR	4263
AF	2633	AS	34975	BF	5	BS	1412
AG	7626	AT	53375	BG	12	BT	504
AH	476	AU	4209	BH	10	BU	8182
AI	13231	AV	7887	BI	3809	BV	214
AJ	364	AW	2553	BJ	625	BW	15
AK	4324	AX	805	BK	2	BX	0
AL	37348	AY	9759	BL	8878	BY	5772
AM	10654	AZ	627	BM	147	BZ	0

CA	19065	CN	47	DA	5990	DN	1069
CB	27	CO	28078	DB	110	DO	7963
CC	2439	CP	9	DC	103	DP	25
CD	42	CQ	145	DD	1859	DQ	68
CE	22746	CR	5362	DE	27519	DR	3736
CF	23	CS	720	DF	76	DS	4525
CG	8	CT	14244	DG	1136	DT	83
CH	21763	CU	4703	DH	157	DU	4537
CI	8898	CV	1	DI	16710	DV	611
CJ	1	CW	4	DJ	219	DW	323
CK	6327	CX	0	DK	16	DX	0
CL	5581	CY	1184	DL	1600	DY	2327
CM	34	CZ	18	DM	623	DZ	3

EA	27189	EN	52215	FA	6363	FN	16
EB	852	EO	2400	FB	21	FO	18485
EC	15794	EP	6178	FC	4	FP	2
ED	46715	EQ	1655	FD	11	FQ	0
EE	15581	ER	76071	FE	8610	FR	7909
EF	5538	ES	45334	FF	5322	FS	134
EG	4147	ET	16110	FG	6	FT	3159
EH	904	EU	837	FH	7	FU	3642
EI	6303	EV	9748	FI	10427	FV	0
EJ	147	EW	4973	FJ	2	FW	19
EK	939	EX	6994	FK	5	FX	0
EL	20096	EY	6405	FL	2440	FY	285
EM	13340	EZ	191	FM	10	FZ	0

GA	5759	GN	2229	HA	37557	HN	1044
GB	31	GO	5699	HB	208	HO	19690
GC	1	GP	10	HC	106	HP	30
GD	39	GQ	0	HD	64	HQ	18
GE	13803	GR	7564	HE	123054	HR	3351
GF	60	GS	1951	HF	79	HS	466
GG	1143	GT	666	HG	12	HT	5936
GH	10126	GU	2843	HH	39	HU	3040
GI	5505	GV	1	HI	32403	HV	9
GJ	0	GW	21	HJ	2	HW	200
GK	4	GX	0	HK	9	HX	0
GL	2313	GY	581	HL	540	HY	1706
GM	256	GZ	4	HM	438	HZ	17

IA	8677	IN	89309	JA	966	JN	0
IB	3177	IO	25736	JB	5	JO	2180
IC	24107	IP	3280	JC	0	JP	0
ID	12684	IQ	435	JD	11	JQ	0
IE	13260	IR	11901	JE	1655	JR	77
IF	7234	IS	41433	JF	0	JS	1
IG	10096	IT	41550	JG	0	JT	0
IH	37	IU	418	JH	0	JU	2458
II	53	IV	9474	JI	126	JV	0
IJ	41	IW	23	JJ	0	JW	0
IK	2231	IX	739	JK	0	JX	0
IL	17184	IY	8	JL	0	JY	2
IM	12548	IZ	2354	JM	0	JZ	0

KA	761	KN	2331	LA	18528	LN	204
KB	39	KO	400	LB	257	LO	14623
KC	13	KP	29	LC	319	LP	831
KD	26	KQ	1	LD	11606	LQ	4
KE	10439	KR	121	LE	31889	LR	440
KF	112	KS	1736	LF	2353	LS	4719
KG	76	KT	53	LG	215	LT	3956
KH	175	KU	92	LH	79	LU	4739
KI	4096	KV	3	LI	23143	LV	1142
KJ	23	KW	98	LJ	0	LW	532
KK	43	KX	0	LK	1070	LX	0
KL	547	KY	401	LL	23983	LY	17317
KM	64	KZ	0	LM	1135	LZ	21

MA	20811	MN	358	NA	11300	NN	3556
MB	3491	MO	12933	NB	183	NO	16996
MC	185	MP	7816	NC	14048	NP	220
MD	16	MQ	0	ND	48955	NQ	189
ME	29848	MR	1416	NE	27647	NR	361
MF	154	MS	3453	NF	1965	NS	16920
MG	40	MT	44	NG	38173	NT	35529
MH	17	MU	4719	NH	389	NU	2802
MI	11933	MV	8	NI	12724	NV	1612
MJ	0	MW	26	NJ	376	NW	221
MK	9	MX	0	NK	2280	NX	99
ML	181	MY	2220	NL	2701	NY	4219
MM	3399	MZ	0	NM	846	NZ	112

OA	2853	ON	61627	PA	11355	PN	23
OB	3552	OO	10269	PB	27	PO	12322
OC	5577	OP	8132	PC	9	PP	5210
OD	6988	OQ	40	PD	10	PQ	1
OE	1695	OR	46329	PE	17333	PR	15417
OF	39455	OS	10590	PF	63	PS	2000
OG	2998	OT	15974	PG	16	PT	3089
OH	920	OU	36473	PH	3059	PU	3699
OI	3262	OV	7130	PI	5058	PV	1
OJ	223	OW	13396	PJ	5	PW	45
OK	3019	OX	507	PK	33	PX	0
OL	13323	OY	1510	PL	9555	PY	347
OM	20479	OZ	188	PM	621	PZ	0

QA	0	QN	4	RA	23436	RN	6179
QB	0	QO	0	RB	984	RO	27052
QC	0	QP	0	RC	3837	RP	1564
QD	0	QQ	0	RD	7146	RQ	41
QE	1	QR	0	RE	67166	RR	4163
QF	0	QS	0	RF	1138	RS	15547
QG	0	QT	0	RG	3436	RT	12968
QH	0	QU	4992	RH	699	RU	4745
QI	0	QV	1	RI	25082	RV	2257
QJ	0	QW	2	RJ	6	RW	434
QK	0	QX	1	RK	3554	RX	17
QL	13	QY	0	RL	3726	RY	8694
QM	0	QZ	0	RM	5840	RZ	33

SA	8937	SN	931	TA	19084	TN	321
SB	447	SO	14471	TB	115	TO	41008
SC	5516	SP	6989	TC	1591	TP	98
SD	356	SQ	402	TD	59	TQ	0
SE	32160	SR	210	TE	43059	TR	14646
SF	605	SS	14540	TF	315	TS	11797
SG	89	ST	41593	TG	74	TT	7370
SH	13568	SU	10606	TH	134409	TU	8564
SI	19860	SV	50	TI	43293	TV	64
SJ	14	SW	1272	TJ	1	TW	2891
SK	1885	SX	3	TK	16	TX	0
SL	2651	SY	1765	TL	4333	TY	7614
SM	2678	SZ	21	TM	1127	TZ	155

UA	4410	UN	15619	VA	4292	VN	2
UB	3285	UO	403	VB	0	VO	2376
UC	6225	UP	5422	VC	2	VP	4
UD	3368	UQ	8	VD	6	VQ	0
UE	4913	UR	18664	VE	30709	VR	24
UF	692	US	16818	VF	0	VS	44
UG	5428	UT	16564	VG	0	VT	3
UH	70	UU	36	VH	0	VU	83
UI	3830	UV	95	VI	9011	VV	2
UJ	28	UW	2	VJ	0	VW	0
UK	87	UX	176	VK	1	VX	0
UL	13016	UY	220	VL	5	VY	225
UM	4669	UZ	118	VM	0	VZ	1

WA	18802	WN	3556	XA	881	XN	3
WB	70	WO	9363	XB	2	XO	125
WC	25	WP	56	XC	900	XP	2426
WD	195	WQ	1	XD	0	XQ	7
WE	14227	WR	1268	XE	643	XR	11
WF	46	WS	1158	XF	23	XS	3
WG	3	WT	216	XG	3	XT	1522
WH	14836	WU	78	XH	130	XU	129
WI	15009	WV	0	XI	1044	XV	1
WJ	0	WW	5	XJ	0	XW	15
WK	60	WX	0	XK	0	XX	4
WL	531	WY	118	XL	22	XY	90
WM	51	WZ	1	XM	1	XZ	0

YA	688	YN	443	ZA	798	ZN	0
YB	365	YO	6250	ZB	9	ZO	216
YC	328	YP	724	ZC	0	ZP	0
YD	166	YQ	1	ZD	0	ZQ	0
YE	4407	YR	423	ZE	2017	ZR	4
YF	34	YS	3343	ZF	1	ZS	2
YG	77	YT	796	ZG	6	ZT	3
YH	50	YU	56	ZH	6	ZU	30
YI	1272	YV	7	ZI	493	ZV	8
YJ	3	YW	242	ZJ	0	ZW	5
YK	39	YX	0	ZK	13	ZX	0
YL	530	YY	3	ZL	107	ZY	113
YM	871	YZ	57	ZM	3	ZZ	349

Table 3.3 The number of occurrences of the most frequent pairs of letters.

TH	134409	IO	25736	WI	15009
HE	123054	RI	25082	WH	14836
IN	89309	IC	24107	TR	14646
ER	76071	LL	23983	LO	14623
AN	73026	RA	23436	SS	14540
RE	67166	LI	23143	SO	14471
ON	61627	CE	22746	CT	14244
AT	53375	BE	22361	WE	14227
EN	52215	CH	21763	NC	14048
ND	48955	MA	20811	GE	13803
ED	46715	OM	20479	SH	13568
OR	46329	EL	20096	OW	13396
ES	45334	SI	19860	EM	13340
TI	43293	HO	19690	OL	13323
TE	43059	TA	19084	IE	13260
ST	41593	CA	19065	AI	13231
IT	41550	WA	18802	UL	13016
IS	41433	UR	18664	RT	12968
TO	41008	LA	18528	MO	12933
AR	39812	FO	18485	NI	12724
OF	39455	PE	17333	ID	12684
NG	38173	LY	17317	IM	12548
HA	37557	IL	17184	PO	12322
AL	37348	NO	16996	MI	11933
OU	36473	NS	16920	IR	11901
NT	35529	US	16818	TS	11797
AS	34975	DI	16710		
HI	32403	UT	16564		
SE	32160	AC	16465		
LE	31889	AD	16331		
VE	30709	ET	16110		
ME	29848	OT	15974		
CO	28078	EC	15794		
NE	27647	UN	15619		
DE	27519	EE	15581		
EA	27189	RS	15547		
RO	27052	PR	15417		

Table 3.4 The number of occurrences of pairs of letters which are not preceded by a letter.

AA	12	AN	37789	BA	4688	BN	0
AB	3229	AO	4	BB	3	BO	4340
AC	3740	AP	2371	BC	1	BP	0
AD	2566	AQ	23	BD	1	BQ	0
AE	117	AR	8038	BE	18231	BR	3491
AF	1812	AS	9689	BF	0	BS	1
AG	2498	AT	7059	BG	3	BT	11
AH	149	AU	1062	BH	1	BU	7046
AI	835	AV	675	BI	1672	BV	0
AJ	2	AW	813	BJ	1	BW	5
AK	12	AX	78	BK	0	BX	0
AL	7850	AY	9	BL	1647	BY	5403
AM	2290	AZ	10	BM	4	BZ	0

CA	9412	CN	0	DA	3219	DN	1
CB	2	CO	22667	DB	0	DO	6125
CC	5	CP	3	DC	7	DP	1
CD	20	CQ	1	DD	0	DQ	0
CE	2122	CR	2299	DE	9322	DR	2464
CF	8	CS	1	DF	0	DS	4
CG	0	CT	14	DG	0	DT	5
CH	5956	CU	1517	DH	1	DU	1403
CI	1355	CV	1	DI	7841	DV	1
CJ	1	CW	1	DJ	8	DW	74
CK	0	CX	0	DK	0	DX	0
CL	3434	CY	128	DL	3	DY	130
CM	32	CZ	13	DM	0	DZ	0

EA	2606	EN	4049	FA	5250	FN	2
EB	14	EO	1	FB	8	FO	15187
EC	529	EP	148	FC	0	FP	2
ED	876	EQ	565	FD	7	FQ	0
EE	13	ER	316	FE	3499	FR	7382
EF	951	ES	1028	FF	3	FS	0
EG	105	ET	240	FG	0	FT	27
EH	10	EU	257	FH	3	FU	1860
EI	645	EV	3485	FI	6578	FV	0
EJ	8	EW	4	FJ	2	FW	0
EK	32	EX	5397	FK	0	FX	0
EL	1558	EY	619	FL	1606	FY	2
EM	1217	EZ	2	FM	2	FZ	0

GA	1825	GN	21	HA	16500	HN	0
GB	0	GO	4456	HB	1	HO	5992
GC	0	GP	1	HC	0	HP	6
GD	0	GQ	0	HD	0	HQ	0
GE	2828	GR	4625	HE	17938	HR	30
GF	0	GS	0	HF	0	HS	0
GG	0	GT	4	HG	0	HT	0
GH	59	GU	1038	HH	0	HU	1651
GI	1701	GV	0	HI	12419	HV	0
GJ	0	GW	1	HJ	0	HW	5
GK	0	GX	0	HK	0	HX	0
GL	749	GY	90	HL	0	HY	287
GM	12	GZ	0	HM	2	HZ	0

IA	0	IN	33904	JA	886	JN	0
IB	14	IO	116	JB	0	JO	1603
IC	89	IP	1	JC	0	JP	0
ID	791	IQ	1	JD	0	JQ	0
IE	5	IR	351	JE	678	JR	77
IF	2190	IS	10829	JF	0	JS	0
IG	104	IT	11492	JG	0	JT	0
IH	1	IU	1	JH	0	JU	2079
II	1	IV	34	JI	90	JV	0
IJ	2	IW	0	JJ	0	JW	0
IK	7	IX	0	JK	0	JX	0
IL	383	IY	1	JL	0	JY	2
IM	2340	IZ	7	JM	0	JZ	0

KA	296	KN	2016	LA	5128	LN	0
KB	0	KO	169	LB	35	LO	5505
KC	9	KP	0	LC	0	LP	2
KD	0	KQ	1	LD	5	LQ	0
KE	1127	KR	87	LE	5269	LR	0
KF	0	KS	2	LF	0	LS	3
KG	0	KT	1	LG	0	LT	13
KH	98	KU	17	LH	0	LU	626
KI	1262	KV	2	LI	7332	LV	0
KJ	0	KW	7	LJ	0	LW	0
KK	1	KX	0	LK	0	LX	0
KL	22	KY	12	LL	455	LY	118
KM	1	KZ	0	LM	1	LZ	0

MA	13043	MN	0	NA	2456	NN	1
MB	4	MO	8669	NB	11	NO	11142
MC	159	MP	5	NC	4	NP	0
MD	5	MQ	0	ND	11	NQ	0
ME	6881	MR	1370	NE	6056	NR	4
MF	2	MS	3	NF	0	NS	8
MG	40	MT	6	NG	2	NT	2
MH	0	MU	3223	NH	0	NU	1056
MI	4950	MV	4	NI	1090	NV	0
MJ	0	MW	0	NJ	1	NW	7
MK	0	MX	0	NK	2	NX	0
ML	15	MY	1677	NL	4	NY	14
MM	33	MZ	0	NM	1	NZ	0

OA	58	ON	12795	PA	6897	PN	4
OB	1180	OO	8	PB	10	PO	6030
OC	660	OP	1921	PC	0	PP	10
OD	139	OQ	0	PD	1	PQ	1
OE	47	OR	5975	PE	5160	PR	12087
OF	38444	OS	68	PF	12	PS	197
OG	6	OT	2144	PG	0	PT	35
OH	163	OU	4314	PH	1173	PU	2638
OI	146	OV	1754	PI	1772	PV	1
OJ	0	OW	1014	PJ	0	PW	1
OK	47	OX	120	PK	0	PX	0
OL	942	OY	21	PL	3651	PY	38
OM	58	OZ	16	PM	3	PZ	0

QA	0	QN	0	RA	3442	RN	0
QB	0	QO	0	RB	1	RO	3044
QC	0	QP	0	RC	7	RP	8
QD	0	QQ	0	RD	20	RQ	0
QE	0	QR	0	RE	16295	RR	0
QF	0	QS	0	RF	1	RS	0
QG	0	QT	0	RG	0	RT	3
QH	0	QU	1952	RH	214	RU	1457
QI	0	QV	0	RI	2218	RV	0
QJ	0	QW	0	RJ	0	RW	0
QK	0	QX	0	RK	0	RX	0
QL	0	QY	0	RL	0	RY	34
QM	0	QZ	0	RM	0	RZ	0

SA	6642	SN	423	TA	3366	TN	5
SB	105	SO	9047	TB	0	TO	31207
SC	2847	SP	3834	TC	6	TP	0
SD	85	SQ	328	TD	0	TQ	0
SE	9712	SR	85	TE	3950	TR	5083
SF	78	SS	151	TF	0	TS	64
SG	28	ST	12486	TG	0	TT	2
SH	8586	SU	7131	TH	110346	TU	1165
SI	4927	SV	12	TI	2973	TV	46
SJ	11	SW	932	TJ	1	TW	2001
SK	602	SX	3	TK	0	TX	0
SL	1320	SY	1086	TL	0	TY	504
SM	1319	SZ	18	TM	0	TZ	0

UA	0	UN	5529	VA	1659	VN	0
UB	3	UO	0	VB	0	VO	1022
UC	1	UP	2797	VC	0	VP	3
UD	8	UQ	0	VD	0	VQ	0
UE	0	UR	223	VE	1942	VR	3
UF	0	US	2525	VF	0	VS	20
UG	32	UT	207	VG	0	VT	2
UH	19	UU	0	VH	0	VU	48
UI	0	UV	0	VI	2096	VV	0
UJ	0	UW	0	VJ	0	VW	0
UK	5	UX	1	VK	0	VX	0
UL	154	UY	0	VL	1	VY	3
UM	23	UZ	0	VM	0	VZ	0

WA	15674	WN	0	XA	2	XN	0
WB	3	WO	7461	XB	0	XO	0
WC	0	WP	1	XC	0	XP	0
WD	0	WQ	1	XD	0	XQ	0
WE	9774	WR	1158	XE	4	XR	3
WF	0	WS	0	XF	0	XS	0
WG	0	WT	14	XG	0	XT	0
WH	14335	WU	4	XH	1	XU	0
WI	13166	WV	0	XI	1	XV	0
WJ	0	WW	2	XJ	0	XW	0
WK	0	WX	0	XK	0	XX	1
WL	1	WY	26	XL	0	XY	11
WM	0	WZ	0	XM	0	XZ	0

YA	293	YN	0	ZA	11	ZN	0
YB	0	YO	5603	ZB	0	ZO	47
YC	0	YP	0	ZC	0	ZP	0
YD	0	YQ	1	ZD	0	ZQ	0
YE	2651	YR	6	ZE	103	ZR	0
YF	2	YS	1	ZF	0	ZS	0
YG	0	YT	1	ZG	0	ZT	0
YH	0	YU	31	ZH	3	ZU	9
YI	81	YV	2	ZI	46	ZV	0
YJ	0	YW	0	ZJ	0	ZW	3
YK	0	YX	0	ZK	0	ZX	0
YL	0	YY	1	ZL	2	ZY	0
YM	2	YZ	0	ZM	0	ZZ	0

Table 3.5 The number of occurrences of the most frequent pairs of letters which are not preceded by a letter.

TH	110346	SU	7131	BR	3491
OF	38444	AT	7059	EV	3485
AN	37789	BU	7046	RA	3442
IN	33904	PA	6897	CL	3434
TO	31207	ME	6881	TA	3366
CO	22667	SA	6642	AB	3229
BE	18231	FI	6578	MU	3223
HE	17938	DO	6125	DA	3219
HA	16500	NE	6056	RO	3044
RE	16295	PO	6030	TI	2973
WA	15674	HO	5992	SC	2847
FO	15187	OR	5975	GE	2828
WH	14335	CH	5956	UP	2797
WI	13166	YO	5603	YE	2651
MA	13043	UN	5529	PU	2638
ON	12795	LO	5505	EA	2606
ST	12486	BY	5403	AD	2566
HI	12419	EX	5397	US	2525
PR	12087	LE	5269	AG	2498
IT	11492	FA	5250	DR	2464
NO	11142	PE	5160	NA	2456
IS	10829	LA	5128	AP	2371
WE	9774	TR	5083	IM	2340
SE	9712	MI	4950	CR	2299
AS	9689	SI	4927	AM	2290
CA	9412	BA	4688	RI	2218
DE	9322	GR	4625	IF	2190
SO	9047	GO	4456	OT	2144
MO	8669	BO	4340		
SH	8586	OU	4314		
AR	8038	EN	4049		
AL	7850	TE	3950		
DI	7841	SP	3934		
WO	7461	AC	3740		
FR	7382	PL	3651		
LI	7332	FE	3499		

Table 3.6 The number of occurrences of pairs of letters which are not followed by a letter.

AA	3	AN	14450	BA	116	BN	1
AB	61	AO	38	BB	35	BO	27
AC	86	AP	282	BC	9	BP	0
AD	7540	AQ	3	BD	1	BQ	0
AE	76	AR	4979	BE	6684	BR	1
AF	45	AS	20782	BF	4	BS	295
AG	160	AT	20337	BG	2	BT	130
AH	166	AU	127	BH	0	BU	5
AI	37	AV	22	BI	37	BV	0
AJ	2	AW	883	BJ	0	BW	5
AK	359	AX	320	BK	0	BX	0
AL	14211	AY	6614	BL	2	BY	5657
AM	1615	AZ	2	BM	14	BZ	0

CA	351	CN	1	DA	310	DN	831
CB	1	CO	359	DB	0	DO	1532
CC	6	CP	0	DC	27	DP	0
CD	9	CQ	1	DD	167	DQ	0
CE	11093	CR	7	DE	4532	DR	196
CF	8	CS	695	DF	2	DS	4151
CG	0	CT	3102	DG	3	DT	32
CH	9345	CU	9	DH	0	DU	78
CI	9	CV	1	DI	97	DV	0
CJ	0	CW	0	DJ	0	DW	6
CK	3464	CX	0	DK	0	DX	0
CL	0	CY	1016	DL	4	DY	2067
CM	31	CZ	2	DM	0	DZ	0

EA	754	EN	15071	FA	10	FN	2
EB	38	EO	50	FB	0	FO	1
EC	99	EP	772	FC	2	FP	0
ED	41539	EQ	5	FD	0	FQ	0
EE	2706	ER	29624	FE	1231	FR	0
EF	438	ES	22432	FF	1091	FS	105
EG	130	ET	4905	FG	1	FT	947
EH	19	EU	16	FH	0	FU	1
EI	65	EV	134	FI	2	FV	0
EJ	5	EW	3342	FJ	0	FW	0
EK	538	EX	427	FK	0	FX	0
EL	1971	EY	5275	FL	5	FY	212
EM	3052	EZ	57	FM	2	FZ	0

GA	79	GN	525	HA	54	HN	424
GB	0	GO	1128	HB	1	HO	2321
GC	0	GP	0	HC	1	HP	6
GD	1	GQ	0	HD	1	HQ	0
GE	4682	GR	1	HE	82815	HR	46
GF	1	GS	1838	HF	1	HS	432
GG	48	GT	4	HG	0	HT	4501
GH	3031	GU	0	HH	3	HU	31
GI	11	GV	0	HI	51	HV	0
GJ	0	GW	0	HJ	0	HW	0
GK	0	GX	0	HK	1	HX	0
GL	0	GY	449	HL	31	HY	886
GM	26	GZ	0	HM	63	HZ	0

IA	1047	IN	26019	JA	8	JN	0
IB	14	IO	376	JB	0	JO	15
IC	4673	IP	1035	JC	0	JP	0
ID	4342	IQ	1	JD	0	JQ	0
IE	896	IR	3569	JE	4	JR	77
IF	2227	IS	23660	JF	0	JS	1
IG	523	IT	11039	JG	0	JT	0
IH	2	IU	1	JH	0	JU	4
II	31	IV	2	JI	12	JV	0
IJ	4	IW	0	JJ	0	JW	0
IK	33	IX	344	JK	0	JX	0
IL	1668	IY	0	JL	0	JY	0
IM	3061	IZ	21	JM	0	JZ	0

KA	97	KN	0	LA	382	LN	56
KB	0	KO	7	LB	47	LO	198
KC	8	KP	0	LC	0	LP	343
KD	0	KQ	0	LD	9174	LQ	0
KE	3910	KR	0	LE	11317	LR	0
KF	0	KS	1514	LF	2022	LS	2960
KG	0	KT	1	LG	0	LT	1263
KH	6	KU	9	LH	2	LU	20
KI	64	KV	2	LI	99	LV	0
KJ	0	KW	0	LJ	0	LW	0
KK	1	KX	0	LK	414	LX	0
KL	0	KY	290	LL	11816	LY	16444
KM	1	KZ	0	LM	205	LZ	1

MA	388	MN	164	NA	531	NN	168
MB	124	MO	38	NB	0	NO	2358
MC	5	MP	254	NC	36	NP	9
MD	8	MQ	0	ND	36613	NQ	1
ME	9439	MR	841	NE	8387	NR	1
MF	1	MS	2390	NF	1	NS	7935
MG	39	MT	10	NG	30225	NT	13367
MH	0	MU	12	NH	3	NU	14
MI	110	MV	3	NI	115	NV	0
MJ	0	MW	0	NJ	0	NW	7
MK	0	MX	0	NK	1101	NX	16
ML	13	MY	1835	NL	0	NY	3492
MM	107	MZ	0	NM	0	NZ	7

OA	27	ON	27785	PA	114	PN	0
OB	340	OO	875	PB	0	PO	27
OC	49	OP	819	PC	0	PP	19
OD	2661	OQ	0	PD	2	PQ	1
OE	155	OR	17981	PE	1102	PR	1
OF	36570	OS	363	PF	8	PS	1462
OG	154	OT	6368	PG	0	PT	955
OH	131	OU	3663	PH	217	PU	0
OI	8	OV	102	PI	59	PV	0
OJ	0	OW	5005	PJ	0	PW	1
OK	1269	OX	164	PK	0	PX	0
OL	1313	OY	532	PL	3	PY	281
OM	5705	OZ	9	PM	10	PZ	0

QA	0	QN	3	RA	513	RN	1899
QB	0	QO	0	RB	85	RO	447
QC	0	QP	0	RC	45	RP	103
QD	0	QQ	0	RD	3528	RQ	0
QE	0	QR	0	RE	22134	RR	41
QF	0	QS	0	RF	26	RS	9294
QG	0	QT	0	RG	161	RT	3395
QH	0	QU	5	RH	8	RU	26
QI	0	QV	0	RI	129	RV	9
QJ	0	QW	2	RJ	0	RW	0
QK	0	QX	0	RK	1810	RX	12
QL	0	QY	0	RL	335	RY	7635
QM	0	QZ	0	RM	1311	RZ	3

SA	135	SN	365	TA	549	TN	4
SB	25	SO	3181	TB	0	TO	28365
SC	26	SP	56	TC	62	TP	2
SD	17	SQ	6	TD	5	TQ	0
SE	10446	SR	15	TE	7262	TR	6
SF	7	SS	5604	TF	4	TS	10858
SG	3	ST	12800	TG	0	TT	227
SH	1728	SU	18	TH	12032	TU	19
SI	27	SV	0	TI	234	TV	60
SJ	2	SW	10	TJ	0	TW	0
SK	393	SX	3	TK	0	TX	0
SL	2	SY	412	TL	1	TY	6833
SM	780	SZ	1	TM	2	TZ	74

UA	15	UN	708	VA	116	VN	0
UB	234	UO	51	VB	0	VO	20
UC	8	UP	2518	VC	1	VP	4
UD	216	UQ	0	VD	4	VQ	0
UE	1836	UR	3139	VE	10655	VR	0
UF	8	US	4237	VF	0	VS	23
UG	169	UT	10109	VG	0	VT	1
UH	43	UU	1	VH	0	VU	1
UI	7	UV	0	VI	3	VV	0
UJ	0	UW	0	VJ	0	VW	0
UK	13	UX	95	VK	0	VX	0
UL	1122	UY	123	VL	0	VY	220
UM	851	UZ	9	VM	0	VZ	0

WA	21	WN	3053	XA	1	XN	0
WB	0	WO	1513	XB	0	XO	0
WC	3	WP	0	XC	0	XP	0
WD	64	WQ	0	XD	0	XQ	0
WE	2892	WR	2	XE	9	XR	1
WF	0	WS	954	XF	3	XS	0
WG	0	WT	12	XG	3	XT	506
WH	2	WU	1	XH	1	XU	0
WI	2	WV	0	XI	17	XV	0
WJ	0	WW	1	XJ	0	XW	0
WK	16	WX	0	XK	0	XX	2
WL	63	WY	11	XL	0	XY	23
WM	0	WZ	0	XM	0	XZ	0

YA	21	YN	48	ZA	49	ZN	0
YB	0	YO	26	ZB	0	ZO	20
YC	1	YP	7	ZC	0	ZP	0
YD	23	YQ	0	ZD	0	ZQ	0
YE	187	YR	15	ZE	660	ZR	0
YF	0	YS	1816	ZF	0	ZS	0
YG	0	YT	11	ZG	0	ZT	1
YH	0	YU	6	ZH	0	ZU	6
YI	3	YV	0	ZI	21	ZV	0
YJ	1	YW	0	ZJ	0	ZW	0
YK	5	YX	0	ZK	0	ZX	0
YL	31	YY	1	ZL	0	ZY	77
YM	10	YZ	0	ZM	0	ZZ	125

Table 3.7 The number of occurrences of the most frequent pairs of letters which are not followed by a letter.

HE	82815	RY	7635	LS	2960
ED	41539	AD	7540	WE	2892
ND	36613	TE	7262	EE	2706
OF	36570	TY	6833	OD	2661
NG	30225	BE	6684	UP	2518
ER	29624	AY	6614	MS	2390
TO	28365	OT	6368	NO	2358
ON	27785	OM	5705	HO	2321
IN	26019	BY	5657	IF	2227
IS	23660	SS	5604	DY	2067
ES	22432	EY	5275	LF	2022
RE	22134	OW	5005	EL	1971
AS	20782	AR	4979	RN	1899
AT	20337	ET	4905	GS	1838
OR	17981	GE	4682	UE	1836
LY	16444	IC	4673	MY	1835
EN	15071	DE	4532	YS	1816
AN	14450	HT	4501	RK	1810
AL	14211	ID	4342	SH	1728
NT	13367	US	4237	IL	1668
ST	12800	DS	4151	AM	1615
TH	12032	KE	3910	DO	1532
LL	11816	OU	3663	KS	1514
LE	11317	IR	3569	WO	1513
CE	11093	RD	3528	PS	1462
IT	11039	NY	3492	OL	1313
TS	10858	CK	3464	RM	1311
VE	10655	RT	3395	OK	1269
SE	10446	EW	3342		
UT	10109	SO	3181		
ME	9439	UR	3139		
CH	9345	CT	3102		
RS	9294	IM	3061		
LD	9174	WN	3053		
NE	8387	EM	3052		
NS	7935	GH	3031		

Table 3.8 The number of occurrences of the most frequent groups of three letters.

THE	91865	EAR	6742	WHI	4994
AND	34024	NOT	6714	OTH	4985
ING	30363	EST	6640	BUT	4953
ION	22053	OUT	6566	FRO	4887
ENT	18441	PER	6401	STE	4883
TIO	17661	INT	6386	STI	4879
HER	15830	OME	6310	TRA	4867
FOR	15449	ILL	6252	UND	4863
HAT	13321	ECT	6162	ITI	4803
THA	12931	MAN	6058	ART	4792
HIS	12826	IST	5942	ANT	4759
TER	12798	GHT	5883	HOU	4757
ERE	12792	OUL	5844	CAL	4706
ATI	12453	AVE	5801	WER	4695
ATE	10845	IGH	5718	HAN	4673
WAS	10391	TIN	5709	SHE	4661
ALL	10388	ULD	5695	COU	4603
VER	9837	AIN	5658	ERI	4519
ITH	9103	ICA	5638	ACT	4495
THI	9080	OVE	5616	HEN	4492
CON	9069	IDE	5598	ORT	4487
RES	8846	INE	5480	HAV	4470
TED	8620	DER	5447	TUR	4440
WIT	8571	ORE	5420	URE	4433
NCE	8532	HAD	5373	NTI	4422
ERS	8234	RED	5274	TIC	4377
MEN	8185	CTI	5259	IND	4370
ARE	7746	YOU	5248	ENC	4329
ONS	7697	OUR	5231	ERA	4313
EVE	7660	STR	5209	EEN	4277
REA	7624	NTE	5205	THO	4266
PRO	7520	ROM	5197	AME	4247
STA	7331	HIN	5183	OUS	4245
ESS	7219	OUN	5146	HIC	4221
COM	6957	RAT	5064	UGH	4193
IVE	6856	BLE	5061	PAR	4142
ONE	6825	PRE	4999	ROU	4133

NDE	4114	ESE	3393	NES	3019
WHE	4112	OWN	3385	OST	3018
ITY	4068	DIN	3341	RAL	2978
ICH	4039	PLE	3339	BER	2976
RIN	4036	OSE	3336	TIV	2963
USE	4005	IAL	3310	REE	2963
LIN	3893	ONT	3281	AKE	2963
TEN	3884	HIM	3277	SOM	2962
CAN	3867	SIN	3272	HES	2949
IES	3858	RAN	3261	ACE	2937
TOR	3824	CES	3261	ONA	2928
EAS	3822	REC	3249	APP	2921
MIN	3819	ASS	3248	WOU	2911
HEY	3801	SED	3246	SON	2889
NED	3795	INS	3242	KIN	2882
OUG	3765	INC	3234	RIC	2879
UST	3764	NIN	3232	WIL	2878
PLA	3753	EAD	3193	HAS	2866
EAT	3752	SHO	3182	TRI	2865
ARD	3723	CHA	3181	STO	2862
SSI	3713	IME	3177	SEN	2851
LIT	3699	TAN	3166	HEI	2851
TAT	3640	ONG	3158	POS	2827
MOR	3629	LAT	3158	ADE	2818
LES	3601	LAN	3158	NOW	2815
AGE	3597	NAT	3141	ERN	2815
NAL	3592	TIM	3137	ACH	2814
LLY	3587	REN	3134	MER	2787
ANC	3560	EME	3114	SPE	2758
WOR	3555	NTS	3103	UNI	2755
ELL	3531	LLE	3097	ENE	2748
ABL	3527	ICE	3096	HEA	2728
END	3521	LEA	3092	TES	2726
AST	3519	RIE	3088	ITS	2722
TTE	3513	WHO	3078	EIR	2722
ITE	3485	LED	3074	GRE	2721
DEN	3481	DIS	3060	OPE	2720
ANY	3455	CHE	3048	OMP	2703
VEN	3441	SIO	3026	NDI	2694

ACK	2685	ERY	2375
IRE	2665	NSI	2367
BEE	2657	ALI	2363
CHI	2644	MON	2358
DED	2639	SEE	2354
SEL	2636	ARI	2354
NER	2616	ECO	2352
POR	2600	SIT	2326
LAR	2590	TAL	2324
CAT	2589	MAR	2323
HAR	2574	WAR	2322
ATT	2573	SER	2321
ABO	2569	MPL	2320
SID	2568	CEN	2315
RIT	2563	PEN	2308
AID	2563	UAL	2307
OLD	2558	ISH	2297
UNT	2516	IEN	2296
UCH	2516	FIC	2292
GRA	2505	OWE	2274
ORM	2504	LIC	2270
NEW	2504	SSE	2265
NGE	2500	ATH	2260
ANG	2482	ARY	2248
MAT	2478	PRI	2243
NST	2465	OOD	2242
THR	2457	WHA	2236
HEM	2351	LON	2226
ANS	2443	OOK	2224
HOW	2440	SES	2223
ORD	2437	NTR	2217
ENS	2417	NLY	2216
DES	2415	EAC	2216
ILE	2414		
ELY	2413		
EXP	2389		
WAY	2378		
LOW	2377		
INA	2377		

Table 3.9 The number of occurrences of the most frequent groups of three letters which are not preceded by a letter.

THE	85094	PLA	2955	ONL	1751
AND	29019	WOU	2908	OVE	1739
THA	12722	EVE	2899	SUC	1708
FOR	12324	OUT	2878	INC	1699
WAS	10369	WIL	2846	MAR	1692
WIT	8410	DIS	2800	BEC	1687
CON	7792	REA	2797	INS	1677
HIS	7480	SOM	2780	OFF	1657
THI	7144	RES	2626	UNI	1646
PRO	6561	BEE	2624	MUS	1639
NOT	5655	CAN	2584	FIN	1627
COM	5645	PAR	2560	MAY	1621
HAD	5238	STR	2508	LIK	1613
YOU	5231	HAS	2504	SPE	1593
ARE	4995	CHA	2457	FAC	1582
WHI	4937	THR	2357	GRE	1574
FRO	4775	THO	2333	COL	1574
STA	4765	EXP	2299	IMP	1553
BUT	4498	SEE	2277	DES	1526
INT	4345	ABO	2209	TWO	1516
HAV	4295	ITS	2163	REP	1508
HER	4267	OTH	2128	STO	1495
COU	4066	TIM	2125	UND	1486
WHE	3847	HEA	2124	PRI	1478
ALL	3660	WHA	2074	ACT	1474
ONE	3627	SAI	2060	HOW	1456
PRE	3546	NEW	2048	GRO	1451
SHE	3507	TRA	2038	DID	1450
MAN	3462	APP	2002	HAN	1416
WOR	3336	IND	1987	TOO	1396
WER	3316	FIR	1946	POS	1372
HIM	3222	ANY	1928	NAT	1365
WHO	3073	REC	1869	CHI	1361
MOR	3067	YEA	1857	NOW	1359
SHO	3022	CAR	1826	USE	1357
PER	3007	LEA	1801	MEA	1352

KNO	1351	SEN	1136	BEL	923
SEC	1347	SUR	1125	RAT	917
OUR	1345	STI	1105	ENT	916
REL	1330	MON	1096	PEO	911
ASS	1312	JUS	1088	DON	910
SHA	1311	CEN	1077	WAT	895
MOS	1310	ALS	1076	EXC	886
MAK	1298	MIL	1075	ELE	881
ACC	1298	BRI	1072	EAC	876
FOU	1292	WAY	1071	OLD	866
MAD	1283	MAT	1068	INV	852
LON	1283	SUB	1065	LAT	848
GRA	1279	DOW	1065	INF	847
SER	1268	MEN	1063	LIF	844
MIN	1265	DEC	1046	BAS	843
ATT	1242	DEV	1043	TRI	834
HOU	1238	WAR	1039	SAY	827
AFT	1235	HEL	1030	LIN	826
BET	1229	BEF	1030	DEP	824
BAC	1217	STE	1018	SOC	819
SIN	1216	FEE	1016	REG	818
POL	1216	CAM	1012	TUR	816
BRO	1215	AME	999	TOW	816
AGA	1214	GIV	997	PAT	812
LOO	1206	HIG	996	RIG	804
DAY	1203	GET	988	CAS	796
WEL	1198	BOT	988	NOR	794
OPE	1190	HAR	979	LET	794
LIT	1184	DIF	964	ANO	791
TAK	1182	DEA	960	NEV	786
SOU	1180	PAS	955	FAR	779
SCH	1178	MUC	955	WIN	777
CAL	1170	COR	952	TRE	771
FRE	1169	EFF	951	ART	769
CLA	1166	EAR	951	DET	767
VER	1163	OWN	946	BEI	767
REM	1151	GOO	942	MOV	764
SUP	1150	CLO	938	WAL	763
GEN	1148	SAM	936	DIR	761
STU	1143	MIS	935	FOL	760

NEE	753	FIG	664
TRU	751	REV	658
HOM	751	RET	654
SIM	745	TEN	653
SET	745	DRI	652
PUB	743	HOL	648
BEA	743	FEL	646
LAS	742	CAP	646
END	741	SEL	645
CLE	737	CRE	644
BEG	735	MOT	642
MIG	731	FRI	639
ENG	731	AUT	638
SMA	728	VAL	633
AWA	727	FEW	633
QUI	726	FAM	633
MET	722	RAN	629
CIT	718	DUR	625
REF	717	LOC	623
MEM	717	ARO	623
ADD	716	LAN	620
POI	715	BUS	619
IDE	710	AMO	619
EXT	709	DEM	617
WRI	708	ASK	616
GOV	704	EYE	615
WAN	697	PAI	614
FRA	696	TER	609
NUM	695	QUE	607
HAL	687	EAS	605
LAR	679	SOL	602
SIG	675	CER	602
SEV	675		
ROO	675		
PUR	671		
DEF	670		
BAR	670		
EXA	669		
ORD	668		
LIV	667		

Table 3.10 The number of occurrences of the most frequent groups of three letters which are not followed by a letter.

THE	69934	IVE	3873	DER	2364
AND	31164	ESS	3853	UCH	2357
ING	27296	BLE	3842	AIN	2354
ION	14989	HEY	3785	ANT	2286
HAT	12934	ICH	3735	WHO	2280
HIS	12145	ILL	3727	OUS	2276
WAS	9808	IES	3703	OST	2259
ENT	9505	YOU	3626	AME	2235
FOR	9484	NED	3607	RAL	2218
TED	8494	OME	3604	NLY	2216
ERE	8326	LLY	3533	UST	2209
HER	8324	SED	3181	EAR	2188
ITH	7560	NTS	3083	ARY	2157
NCE	5997	SHE	2985	KED	2153
TER	5842	OWN	2912	OSE	2149
ARE	5343	OUR	2893	INE	2140
ERS	5319	URE	2883	AGE	2117
ULD	5215	LED	2845	ICE	2109
ONE	5194	MAN	2832	ONG	2102
HAD	5134	ANY	2827	NOW	2076
ALL	5081	CAN	2710	AST	2074
NOT	4889	EIR	2681	ACE	2057
OUT	4820	CAL	2666	NEW	2049
AVE	4785	HIM	2624	UND	2013
ONS	4776	EST	2609	ELL	2000
GHT	4482	DED	2502	CES	1960
RED	4465	NAL	2486	TLY	1942
BUT	4400	USE	2464	VEN	1938
ROM	4367	AID	2464	ERY	1938
ATE	4138	HAS	2432	IME	1936
ORE	4122	ITS	2409	TES	1914
VER	4052	ARD	2395	LES	1904
ITY	4045	UGH	2378	NTO	1899
EEN	3995	IAL	2376	SES	1898
HEN	3910	ELY	2368	OLD	1897

IDE	1895	CED	1259	IAN	943
HAN	1862	ORT	1255	LAR	923
AKE	1809	STS	1253	GES	920
PLE	1800	IST	1251	NER	907
HEM	1799	OOK	1242	WER	906
VED	1796	HOW	1239	ERN	892
OOD	1796	EAT	1234	OTH	881
ACK	1783	ORY	1233	HES	858
ESE	1759	PED	1228	RLD	857
HED	1753	RLY	1222	IRE	857
DAY	1709	ORK	1207	BLY	847
WAY	1688	RES	1202	EET	844
IKE	1684	TOR	1174	RTS	841
NDS	1682	END	1158	EMS	839
IED	1676	ASE	1140	TOO	838
SON	1667	ORS	1138	ISE	829
ARS	1658	UAL	1134	SEE	809
ADE	1619	ISH	1125	OOL	807
TIC	1544	PER	1108	RCH	804
RST	1523	GER	1101	RTH	791
TWO	1512	ACT	1099	ORD	778
IND	1511	IFE	1096	NSE	777
ELF	1505	TON	1080	OES	770
EAD	1496	ILY	1073	RGE	769
NGS	1491	LSO	1072	ZED	767
AYS	1470	DID	1071	NGE	756
ITE	1454	TAL	1035	OND	750
VES	1453	EED	1032	ASS	750
ECT	1443	OVE	1004	AIR	748
TLE	1422	CTS	985	ISM	722
MAY	1404	FUL	984	RTY	719
MEN	1379	NES	981	ETS	715
ILE	1350	GED	977	INS	714
ACH	1349	LOW	972	HIP	712
MES	1348	RDS	964	OFF	710
MED	1341	TEN	960	INT	710
ART	1303	RSE	956	ELD	702
ANS	1298	GET	955	DES	702
REE	1287	ALS	954	LIC	701
BER	1264	TRY	944	EAL	700

LLS	696	OWS	541
DON	692	NEY	537
DLY	689	MRS	537
WED	683	MIC	537
UTH	667	YED	533
EPT	663	REN	533
INK	655	BED	531
ORM	641	SAY	530
SIS	635	IGN	525
OOR	635	ARK	519
NST	635	URN	518
SLY	634	IZE	518
ICS	634	OTE	515
LET	633	TEM	511
IGH	618	HIN	510
ODY	617	IER	509
UNG	603	EFT	508
ADY	601	ULT	507
FEW	600	WAR	505
UES	597	PUT	505
MER	592	EXT	505
RMS	591	ELS	503
EEP	588	EEK	501
OLE	587	GOT	500
OSS	583	NTY	499
YES	580	GAN	499
ICK	579	OON	498
OOM	578	EES	495
DGE	577	OAD	493
OCK	575	URY	488
KEN	573	EAS	485
SET	569	PLY	482
ATH	561	KES	478
PON	555	OPE	477
LER	554	ETY	475
LAY	553	TCH	471
EAN	544	RCE	470
		DEN	470

Table 3.11 The number of occurrences of the most frequent groups of three letters in alphabetic order. This table is limited to groups occurring with a frequency of more than five thousand in Table 3.8.

	Not preceded by a letter	Anywhere in word	Not followed by a letter
AIN		5638	2345
ALL	3660	10388	5081
AND	29019	34024	31164
ARE	4995	7746	5343
ATE		10845	4138
ATI		12453	
AVE		5801	4785
BLE		5061	3842
COM	5646	6957	
CON	7792	9069	
CTI		5259	
DER		5447	2364
EAR	951	6742	
ECT		6162	1443
ENT	916	18441	9505
ERE		12792	8326
ERS		8234	5319
ESS		7219	3853
EST		6640	2609
EVE	2899	7660	
FOR	12324	15449	9484
GHT		5883	4482
HAD	5238	5373	5134
HAT		13321	12934
HER	4267	15830	8324
HIN		5183	510
HIS	7480	12826	12145
ICA		5638	
IDE	710	5598	1895
IGH		5718	618
ILL		6252	3727
INE		5480	2140
ING		30363	27296
INT	4345	6386	710

	Not preceded by a letter	Anywhere in word	Not followed by a letter
ION		22053	14989
IST		5942	1251
ITH		9103	7560
IVE		6856	3873
MAN	3462	6058	2832
MEN	1063	8185	1379
NCE		8532	5997
NOT	5655	6714	4889
NTE		5205	
OME		6310	3604
ONE	3627	6825	5194
ONS		7697	4776
ORE		5420	4122
OUL		5844	
OUN		5146	
OUR	1345	5231	2893
OUT	2878	6566	4820
OVE	1739	5616	1004
PER	3007	6401	1108
PRO	6561	7520	
RAT	917	5064	
REA	2797	7624	
RED		5274	4465
RES	2626	8846	1202
ROM		5197	4367
STA	4765	7331	
STR	2508	5209	
TED		8620	8494
TER	609	12798	5842
THA	12722	12931	
THE	85094	91865	69934
THI	7144	9080	
TIN		5709	
TIO		17661	
ULD		5695	5215
VER	1163	9837	4052
WAS	10369	10391	9808
WIT	8410	8571	
YOU	5231	5248	3626

Table 3.12 The number of occurrences of specific groups of letters.

AR	39812	CON	9069
AS	34975	COM	6957
AND	34024	CAN	3867
ANCE	2741	COULD	1776
ALLY	2939	CHILD	720
ALSO	1071	CANNOT	258
ATION	9180	CHILDREN	385
ABOUT	1830	CONCEIVE	48
AFTER	1262	CHARACTER	323
AGAIN	1207	CONCEIVING	2
ABOVE	302	DO	7963
ALWAYS	459	DD	1859
ACROSS	281	DIS	3060
ALMOST	432	DAY	2178
AGAINST	627	DECLARE	87
ALREADY	273	DECEIVE	7
ALTHOUGH	318	DECLARING	11
AFTERNOON	122	DECEIVING	5
ACCORDING	170	ER	76071
AFTERWARD	30	ED	46715
ALTOGETHER	30	EN	52215
BY	5772	EA	27189
BE	22361	ENCE	3238
BB	573	EVER	3552
BLE	5061	EVERY	915
BUT	4953	EITHER	425
BLIND	82	ENOUGH	431
BELOW	147	FF	5322
BEFORE	1018	FOR	15449
BEHIND	258	FUL	1771
BESIDE	144	FROM	4392
BEYOND	177	FIRST	1387
BETWEEN	730	FRIEND	405
BRAILLE	1	FATHER	266
BECAUSE	882	GH	10126
BENEATH	57	GG	1143
CH	21763	GO	5699
CC	2439	GOOD	936

GREAT	1026	OUT	6566
HIS	12826	ONG	3158
HAD	5373	OUND	2552
HIM	3277	OUNT	1666
HAVE	4048	OUGHT	1113
HERE	5554	ONESELF	5
HIMSELF	603	O'CLOCK	46
HERSELF	125	OURSELVES	74
IN	89309	PART	2209
IT	41550	PAID	165
ING	30363	PEOPLE	907
ITY	4068	PERHAPS	307
ITS	2722	PERCEIVE	31
INTO	1817	PERCEIVING	1
ITSELF	305	QUITE	284
IMMEDIATE	204	QUICK	179
JUST	1259	QUESTION	520
KNOW	1352	RIGHT	1046
KNOWLEDGE	177	RATHER	372
LIKE	1768	RECEIVE	278
LESS	1272	REJOICE	3
LORD	134	RECEIVING	34
LITTLE	850	REJOICING	4
LETTER	274	ST	41593
MENT	6214	SH	13568
MORE	2437	SO	14471
MUST	1058	SION	2972
MUCH	943	SOME	2871
MANY	1127	SAID	1968
MOTHER	319	SUCH	1301
MYSELF	129	SHALL	317
NOT	6714	STILL	816
NESS	1598	SHOULD	1035
NAME	595	SPIRIT	319
NEITHER	141	TO	41008
NECESSARY	237	TH	134408
OF	39455	THE	91865
OU	36473	THAT	10782
OW	13396	TION	17499
ONE	6825	THIS	5140

TIME	2443
THERE	3251
THEIR	2692
THESE	1577
THOSE	849
TODAY	324
THROUGH	1119
TONIGHT	40
THYSELF	0
TOGETHER	301
TOMORROW	66
THEMSELVES	270
US	16818
UPON	512
UNDER	1449
VERY	1866
WH	14836
WAS	10391
WITH	8296
WILL	2623
WERE	3416
WORK	1514
WORD	581
WHICH	3564
WOULD	2849
WHERE	1286
WORLD	877
WHOSE	251
YOU	5248
YOUR	1028
YOUNG	475
YOURSELF	73
YOURSELVES	8